

**UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III**

IN THE MATTER OF:

DuPont Teijin Films
3600 Discovery Drive
Chester, Virginia 23836

EPA I.D. No. VAD 000 019 273

RESPONDENT

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)
) ADMINISTRATIVE ORDER
)
) ON CONSENT
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) DOCKET NO.
) RCRA-03-2012-0229 AM
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) Proceeding under Section 3013
) of the Resource
) Conservation and Recovery
) Act, as amended, 42 U.S.C.
) § 6934.

ADMINISTRATIVE ORDER ON CONSENT

The parties to this Final Administrative Order on Consent (Consent Order), the United States Environmental Protection Agency (EPA) and DuPont Teijin Films of Hopewell, Virginia (Respondent or DTF), having agreed to entry of this Consent Order, it is therefore Ordered and Agreed that:

I. JURISDICTION

1. This Consent Order is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency by Section 3013 of the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (collectively referred to hereinafter as "RCRA"), 42 U.S.C. § 6934. The authority vested in the Administrator has been delegated to the Regional Administrators by EPA Delegation No. 8-20 dated May 11, 1994, and was further delegated to the Director of the Land

and Chemicals Division by EPA Region III Delegation No. 8-20 dated September 20, 1999.

2. On March 6, 1986, EPA granted the Commonwealth of Virginia (the Commonwealth) authorization to operate a state hazardous waste program in lieu of the federal program, pursuant to Section 3006(b) of RCRA, 42 U.S.C. § 6926(b), and has authorized revisions to the Commonwealth's authorized hazardous waste program since that time. The Commonwealth, however, does not have authority to enforce Section 3013 of RCRA.

3. This Consent Order is issued to Respondent, the owner and operator of a facility located at 3600 Discovery Drive in Chester, VA 23836 (the Facility), as defined further in Section V.B below and depicted in Exhibit 1 attached to this Consent Order and a part thereof.

4. Respondent consents to issuance of this Consent Order, agrees to comply with its terms and will not contest EPA's authority to issue this Consent Order and to enforce its terms. For purposes of this Consent Order and subsequent actions with respect to this Order only, Respondent admits to the jurisdictional allegations, and agrees not to contest EPA's jurisdiction to compel compliance with this Consent Order in any subsequent enforcement proceeding, either administrative or judicial, but does not admit to the findings of fact and conclusions of law in this Order. Further, Respondent will not contest EPA's jurisdiction to (1) require compliance with the terms of this Consent Order or (2) impose sanctions for violations of this Consent Order.

II. DEFINITIONS

5. This Consent Order incorporates the definitions in RCRA, 42 U.S.C. §§ 6901 - 6922k, and the regulations promulgated under RCRA unless otherwise specified.

III. PARTIES BOUND

6. This Consent Order shall apply to and be binding upon EPA, the Respondent, and Respondent's agents, successors, assigns, trustees, receivers, and all persons, including but not limited to contractors and consultants, acting on behalf of Respondent. Respondent will be responsible for and liable for any violations of this Consent Order, regardless of Respondent's use of employees, agents, contractors, or consultants to perform work required by this Consent Order.

7. No change in ownership of any property covered by this Consent Order or in the corporate or partnership status of Respondent, shall in any way alter, diminish, or otherwise affect Respondent's obligations and responsibilities under this Consent Order. Respondent will give written notice of this Consent Order to any successor in interest prior to transferring ownership or operation of the Facility or a portion thereof and will notify EPA in writing within five (5) days of the transfer. This written notice will describe how the Respondent has assured that, despite the transfer, all institutional controls required now or in the future for the Facility will be implemented and maintained.

8. Respondent shall provide a copy of this Consent Order to all supervisory personnel, contractors, subcontractors, laboratories, and consultants retained to conduct and/or monitor any portion of the work performed pursuant to this Consent Order and shall do so within fifteen (15) calendar days of the effective date of this Consent Order or date of such retention, whichever is later. All contracts, agreements or other arrangements with such persons shall require such persons to conduct and/or monitor the work in accordance with the requirements of this Consent Order. Notwithstanding the terms of any such contract, agreement or arrangement, Respondent is responsible for complying with this Consent Order and for ensuring that all such persons perform such work in accordance with this Consent Order.

9. In the event of any change in ownership or operation of the Facility or any production unit of the Facility and/or in the event of any change in majority ownership or control of the Respondent, Respondent shall notify EPA in writing of the nature of any such change no later than fifteen (15) calendar days after the effective date of such change. In addition, Respondent shall provide a copy of this Consent Order to any successor to the Respondent and/or to the Facility at least fifteen (15) calendar days prior to the effective date of such change.

IV. STATEMENT OF PURPOSE

10. In entering into this Consent Order, the mutual objectives of EPA and Respondent are to have Respondent: (1) implement the corrective measures selected in the Final Decision and Response to Comments (FDRTC) issued on August 22, 2012 attached herein and made a part hereof as Exhibit 2 and (2) determine the need for, and implement, interim measures at the Facility as appropriate under Section 3013 of RCRA.

V. EPA'S FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECLARATIONS

11. Respondent neither admits nor denies the following Findings of Fact, Conclusions of Law and Determinations:

A. Respondent is a corporation and is a "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).

B. Respondent is the owner and/or operator of a hazardous waste treatment, facility located at 3600 Discovery Drive, Chester, Virginia at which hazardous substances are, or have been stored, treated or disposed of, within the meaning of Section 3013 (a) of RCRA, U.S.C. Section 6934 (a).

C. The Facility consists of about 147 acres and is bordered by water on two sides. The Facility was constructed by ICI America Inc. in the early 1970s and was purchased by E.I. du Pont de Nemours and Company (DuPont) in 1998. DuPont entered into a joint venture with Teijin Films in 2000. This joint venture, DuPont Teijin Films (DTF), owns and operates the buildings, equipment and property improvements at the Facility, and leases the Facility land from E. I. du Pont de Nemours and Company.

Manufacturing activities have consisted of various polymer film materials with over 50 polyester film types and 8,000 products. The primary chemicals currently used in the manufacturing process include ethylene glycol, and terephthalic acid, and historically dimethyl terephthalate and phenolic compounds.

D. In December 2006, DuPont entered EPA's Region III Facility Lead Program in order to conduct RCRA Corrective Action activities at the Facility.

E. DuPont completed investigation activities associated with the Phase I RCRA Facility Investigation (RFI) in spring 2008. DuPont submitted the Phase II RFI Report to EPA and VADEQ in late December 2010, and EPA approved the Phase II RFI Report on March 16, 2011.

F. Eleven VOCs, 12 SVOCs, biphenyl, diphenyl ether, and eleven (11) metals (total and dissolved) were identified as constituents of potential concern (COPCs) in groundwater. COPCs most frequently detected above Federal Maximum Contaminant Levels (MCLs) promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. § 300g-1, and/or Region III's Risk Based Concentrations include three (3) organics (tetrachloroethylene [PCE], 1,4- dioxane, diphenyl ether, a constituent of Dowtherm A™) and two metals (total cobalt and total arsenic). Additionally, certain VOCs, most notably PCE, have been detected in a lower aquifer and identified as originating from an off-site source unrelated to DTF.

G. EPA issued the FDRTC for the Facility on August 22, 2012 which is incorporated by reference herein as though fully set forth at length and is attached herein and made a part hereof as Exhibit 2 to this Consent Order.

H. EPA is authorized to issue an order to Respondent pursuant to Section 3013(b) of RCRA, 42 U.S.C. § 6934(b).

I. Certain contaminants found at the Facility are hazardous wastes as defined by Section 1004(5) of RCRA, 42 U.S.C. § 6903(5), and within the meaning of Section 3013 of RCRA, 42 U.S.C. § 6934.

J. The conditions at the Facility meet the jurisdictional elements of Section 3013 of RCRA, 42 U.S.C. § 6934.

K. The monitoring, testing, analysis, and reporting set forth in this Consent Order are reasonable to ascertain the nature and extent of the hazard at the Facility.

VI. ORDER FOR MONITORING, TESTING, ANALYSIS AND REPORTING

12. Pursuant to Section 3013 of RCRA, 42 U.S.C. § 6934, Respondent agrees to and is hereby ordered to perform monitoring, testing, analysis and reporting with respect to the

Facility in the manner and by the dates specified herein. All work undertaken pursuant to this Consent Order shall be developed and performed, as appropriate and approved by EPA, in accordance with the Scope of Work for Corrective Measures Implementation (CMI); the Scope of Work for Interim Measures; the Scope of Work for Health and Safety Plan, and RCRA, its implementing regulations and relevant EPA guidance documents. EPA's Scopes of Work and relevant guidance are available at:

http://www.epa.gov/reg3wcmd/ca/ca_resources.htm.

13. EPA acknowledges that Respondent has completed some of the tasks required by this Consent Order and that Respondent has available some of the information and data required by this Consent Order. This previous work, including work performed under the Facility Lead Program, may be used to meet the requirements of this Consent Order, upon submission to and formal approval by EPA.

14. The contents of http://www.epa.gov/reg3wcmd/ca/ca_resources.htm, are incorporated herein by reference.

15. "Days" as used herein shall mean calendar days unless otherwise specified.

A. INTERIM MEASURES (IM)

16. In the event Respondent identifies an immediate or potential threat to human health and/or the environment at/or from the Facility, or discovers new releases of hazardous waste and/or hazardous constituents at/or from the Facility not previously identified, Respondent shall notify the EPA Project Coordinator orally within forty eight (48) hours of discovery and notify EPA in writing within three (3) calendar days of such discovery summarizing the immediacy and magnitude of the potential threat(s) to human health or the environment. Upon written request of EPA, Respondent shall submit to EPA for approval an IM Workplan in accordance with the IM Scope of Work. Upon receipt of EPA approval of an IM Workplan, Respondent shall implement the EPA-approved Workplan in accordance with the terms and conditions set forth therein. If EPA determines that immediate action is required, the EPA Project Coordinator may orally authorize Respondent to act prior to EPA's receipt of the IM Workplan.

17. If EPA identifies an immediate or potential threat to human health and/or the environment at the Facility, or discovers new releases of hazardous waste and/or the environment at the Facility not previously identified, EPA will notify Respondent in writing. Within fifteen (15) days of receiving EPA's written notification, Respondent shall submit to EPA for approval an IM Workplan in accordance with the IM Scope of Work that identifies interim measures which will mitigate the threat. Upon receipt of EPA approval of an IM Workplan, Respondent shall implement the EPA-approved Workplan in accordance with the terms and conditions set forth therein. If EPA determines that immediate action is required, the EPA Project Coordinator may orally require Respondent to act prior to Respondent's receipt of EPA's written notification.

18. All IM Workplans shall ensure that the interim measures are designed to mitigate immediate or potential threat(s) to human health and/or the environment and should be consistent with the objectives of, and contribute to the performance of the corrective measures selected by EPA in the FDRTC.

19. Each IM Workplan shall include the following sections as appropriate and approved by EPA: Interim Measures Objectives, Public Involvement Plan, Data Collection Quality Assurance, Data Management, Design Plans and Specifications, Operation and Maintenance, Project Schedule, Interim Measures Construction Quality Assurance, and Reporting Requirements.

20. Concurrent with the submission of an IM Workplan, Respondent shall submit an IM Health and Safety Plan.

B. CORRECTIVE MEASURES IMPLEMENTATION PLAN (CMIP)

21. Corrective Measures Implementation Plan

- A. Within sixty (60) days of the Effective Date of this Consent Order, Respondent shall submit to EPA for approval a Corrective Measures Implementation Plan (CMIP) for implementation of the corrective measures selected in the FDRTC. The CMIP shall be developed in accordance with the Scope of Work for CMI. EPA's Scopes of Work and relevant guidance are available at:
http://www.epa.gov/reg3wcmd/ca/ca_resources.htm.

22. Corrective Measures Implementation Assessment Report

- A. Within one (1) year after EPA approval of the CMIP pursuant to Paragraph 21 immediately above, Respondent shall submit a CMI Assessment Report for EPA approval. The CMI Assessment Report shall provide an evaluation of the effectiveness of the corrective measures in achieving the requirements set forth in the FDRTC.
- B. If, based on the CMI Assessment Report or any other information, EPA determines that the corrective measures are not achieving the requirements set forth in the FDRTC, EPA shall notify Respondent in writing of those activities that must be undertaken to meet the requirements of the FDRTC and the performance criteria established in the CMI Assessment Report and shall set forth a schedule for the completion of those activities. Respondent shall complete the activities in accordance with the schedule set forth in the EPA notification.
- C. No later than five (5) years after the Effective Date of this Consent Order and every five (5) years thereafter until Respondent's receipt of written notice

from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Consent Order, including any additional tasks determined by EPA to be required pursuant to this Consent Order, have been satisfactorily completed, Respondent shall submit a CMI Five-Year Assessment Report. Such Report shall contain an evaluation of the past and projected future effectiveness of the corrective measures in achieving the requirements set forth in the FDRTC.

- D. Respondent may, as part of a CMI Five-Year Assessment Report, request that EPA select, for the purposes of this Consent Order, an alternative and/or supplemental corrective measures.
- E. In the event EPA selects an alternative and/or supplemental corrective measure(s) either in response to a request by respondent pursuant to subparagraph 22.D immediately above, or on its own initiative, EPA may provide Respondent with a period of thirty (30) calendar days from the date Respondent receives written notice from EPA of the selection of an alternative and/or supplemental corrective measure(s) within which to reach an agreement with EPA regarding performance of the alternative and/or supplemental corrective measure(s) in lieu of, or in addition to, the corrective measures. Any such agreement between EPA and Respondent shall be incorporated into and become enforceable under this Consent Order in accordance with Section XXI. SUBSEQUENT MODIFICATION and Respondent shall implement the activities required under any such agreement in accordance with any schedule and provisions contained therein.
- F. Nothing in this Paragraph 22 shall limit EPA's authority to implement or require performance of alternative and/or supplemental corrective measure(s) or to take any other appropriate action under RCRA, or any other legal authority, including the issuance of a unilateral administrative order or the filing of a civil action.

C. SUBMISSIONS / EPA APPROVAL / ADDITIONAL WORK

23. EPA will review the workplans and reports and all other documents submitted by Respondent pursuant to this Consent Order (Submissions) and, with the exception of progress reports, notify Respondent in writing of EPA's approval or disapproval of each such Submission. In the event of EPA's disapproval, EPA shall specify in writing any deficiencies in the Submission. Such disapproval shall not be subject to the Dispute Resolution procedures of Section XIV, below.

24. Within thirty (30) calendar days of receipt of EPA's comments on the Submission, or ten (10) calendar days in the case of an IM Workplan, Respondent shall submit to EPA for approval a revised Submission, which responds to any comments received and/or

corrects any deficiencies identified by EPA. In the event that EPA disapproves of the revised Submission, Respondent may invoke the Dispute Resolution procedures of Section XIV, below. In the event EPA disapproves the revised Submission, EPA reserves the right to revise such Submission and seek to recover from Respondent the costs thereof, in accordance with any applicable law. Any Submission approved or revised by EPA under this Consent Order shall be deemed incorporated into and made an enforceable part of this Consent Order.

25. Two (2) copies of all Submissions required by this Consent Order shall be hand-delivered or sent by Overnight Mail, Return Receipt Requested, to the Project Coordinator designated pursuant to Section XI (PROJECT COORDINATORS) below.

26. All work performed pursuant to this Consent Order shall be under the direction and supervision of a professional engineer or geologist with expertise in hazardous waste site investigation. Within thirty (30) calendar days after the Effective Date of this Consent Order, Respondent shall submit to EPA, in writing, the name, title, and qualifications of the engineer or geologist and of any contractors or subcontractors to be used in carrying out the terms of this Consent Order. Notwithstanding Respondent's selection of an engineer, geologist, contractor or subcontractor, nothing herein shall relieve Respondent of its obligation to comply with the terms and conditions of this Consent Order. EPA shall have the right to disapprove at any time the use of any professional engineer, geologist, contractor or subcontractor selected by Respondent. EPA's disapproval shall not be subject to review under Section XIV (DISPUTE RESOLUTION) or otherwise. Within fifteen (15) calendar days of receipt from EPA of written notice disapproving the use of any professional engineer, geologist, contractor or subcontractor, Respondent shall notify EPA, in writing, of the name, title and qualifications of the personnel who will replace the personnel disapproved by EPA. Respondent shall notify EPA ten (10) days prior to changing voluntarily its engineer or geologist, and/or contractors or subcontractors to be used in carrying out the terms of this Consent Order, and shall submit to EPA in writing, the name, title, and qualifications of such person(s).

D. ADDITIONAL WORK

27. EPA may determine that additional monitoring, testing, analysis and/or reporting is necessary to ascertain the nature and extent of any hazard to human health and the environment which may be presented by the presence or release of hazardous waste at or from the Facility. If EPA determines that such additional work is necessary, EPA will notify the Respondent in writing and specify the basis for its determination that additional work is necessary. Within fifteen (15) days after the receipt of such determination, Respondent shall have the opportunity to meet or confer with EPA to discuss the additional work. If required by EPA, Respondent shall submit for EPA approval a Workplan for the additional work. Respondent shall submit such Workplan to EPA within thirty (30) days of receipt of EPA's determination that additional work is necessary, or according to an alternative schedule established by EPA. Upon EPA's approval of a Workplan(s) for additional work, it shall be enforceable hereunder as set forth in Section XXI. SUBSEQUENT MODIFICATION and Respondent shall implement such Workplan(s) in accordance with the schedule and requirements

contained therein. In the event Respondent fails to perform the additional work, EPA reserves the right to take further enforcement action; to perform such additional work itself and to seek to recover from Respondent all costs of performing such additional work in accordance with all applicable laws.

VII. QUALITY ASSURANCE

28. Commencing on the Effective Date of this Consent Order and continuing thereafter, throughout all sample collection and analysis activities, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures, as specified in the EPA-approved Workplans. In addition, Respondent shall:

A. Ensure that laboratories used by Respondent for analyses perform such analyses according to the EPA methods included in "Test Methods for Evaluating Solid Waste" (SW-846, November 1986) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall submit all analytical protocols to be used for analyses to EPA for approval at least thirty (30) calendar days prior to the commencement of analyses and shall obtain EPA approval prior to the use of such analytical protocols.

B. Ensure that laboratories used by Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. As part of such a program, and upon request by EPA, such laboratories shall perform analyses of samples provided by EPA to demonstrate the quality of the analytical data.

C. Inform the EPA Project Coordinator at least fourteen (14) calendar days in advance of any laboratory analysis regarding which laboratory will be used by Respondent and ensure that EPA personnel and EPA authorized representatives have reasonable access to the laboratories and personnel used for analysis.

VIII. ON-SITE AND OFF-SITE ACCESS

29. Commencing on the Effective Date of this Consent Order and continuing thereafter, upon reasonable notice, and at reasonable times, EPA and/or its authorized representatives shall have the authority to enter and freely move about all property at the Facility for the purposes of, inter alia: interviewing Facility personnel and contractors; inspecting records, operating logs, and contracts related to the Facility as they pertain to the activities addressed by this Consent Order; reviewing the progress of Respondent in carrying out the terms of this Consent Order; conducting such tests, sampling or monitoring as EPA or its Project Coordinator deem necessary; using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted to EPA by Respondent. Respondent shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data that pertain to work undertaken pursuant to this Consent Order.

30. To the extent that work required by this Consent Order, or by any EPA-approved Workplan prepared pursuant hereto, must be done on property not owned or controlled by Respondent, Respondent shall use its best efforts to obtain site access agreement(s) from the present owner(s) and/or lessee(s) of such property, as appropriate, within thirty (30) calendar days of receipt of EPA approval of any Workplan pursuant to this Consent Order which requires work on such property. For purposes of this paragraph, "best efforts" shall include, at a minimum, but shall not be limited to: a) a certified letter from Respondent to the present owner(s) or lessee(s) of such property requesting agreements to permit Respondent, EPA, and its authorized representatives access to such property; and b) the payment of reasonable sums of money in consideration of access. "Reasonable sums of money" means the fair market value of the right of access necessary to implement the requirements of this Consent Order. In the event that such agreements for access are not obtained within thirty (30) calendar days after receipt of EPA approval of any Workplan prepared pursuant to this Consent Order which requires work on property which is not owned or controlled by Respondent, Respondent shall notify EPA, in writing, within seven (7) calendar days after the conclusion of such thirty-day period, regarding both the efforts undertaken to obtain access and the inability to obtain such agreements. In the event that Respondent fails to obtain off-site access, despite the exercise of best efforts, EPA, in its discretion, may assist Respondent in obtaining off-site access for Respondent. Respondent shall reimburse EPA for all costs incurred by EPA in obtaining access, including, but not limited to, attorneys fees and the amount of any just compensation and costs incurred by EPA.

31. Nothing in this Consent Order limits or otherwise affects EPA's rights of access and entry pursuant to applicable law, including, but not limited to RCRA.

IX. SAMPLING AND DATA/DOCUMENT AVAILABILITY

32. Respondent shall submit to EPA the results of all sampling and/or tests or other data generated by, or on behalf of, Respondent in accordance with the requirements of this Consent Order.

33. At the request of EPA, Respondent shall provide or allow EPA or its authorized representatives to take split or duplicate samples of all samples collected by Respondent pursuant to this Consent Order. Nothing in this Consent Order shall limit or otherwise affect EPA's authority to collect samples pursuant to applicable law.

34. Respondent may assert a business confidentiality claim covering all or part of any information submitted to EPA pursuant to this Consent Order in the manner described in 40 C.F.R. § 2.203(b). Any assertion of confidentiality shall be adequately substantiated by Respondent when the assertion is made in accordance with 40 C.F.R. § 2.204(e)(4). Information subject to a confidentiality claim shall be disclosed only to the extent allowed by, and in accordance with, the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such confidentiality claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to Respondent. Respondent shall not assert

any confidentiality claim with regard to any physical, sampling, monitoring, or analytical data.

35. If Respondent wishes to assert a privilege with regard to any document which EPA seeks to inspect or copy pursuant to this Consent Order, Respondent shall identify the document, the privilege claimed, and the basis therefor in writing. For the purposes of this Consent Order, privileged documents are those documents exempt from discovery from the United States in litigation under the Federal Rules of Civil Procedure. Respondent shall not assert a privilege with regard to analytical, sampling and monitoring data.

X. RECORD PRESERVATION

36. Respondent agrees that it shall preserve, during the pendency of this Consent Order and for a minimum of at least six (6) years after its termination, all data, records and documents in its possession or in the possession of its divisions, officers, directors, employees, agents, contractors, successors, and assigns which relate in any way to this Consent Order or to solid and/or hazardous waste management and/or disposal at the Facility. After six (6) years, Respondent shall make such records available to EPA for inspection or shall provide copies of such records to EPA. Respondent shall notify EPA at least thirty (30) calendar days prior to the proposed destruction of any such records, and shall provide EPA with a reasonable opportunity to inspect, copy and/or take possession of any such records. Respondent shall not destroy any record to which EPA has requested access for inspection and/or copying until EPA has obtained such access or withdrawn its request for such access. Nothing in this Section shall in any way limit the authority of EPA under § 3007 of RCRA, 42 U.S.C. § 6927, or any other access or information-gathering authority.

XI. PROJECT COORDINATORS

37. EPA hereby designates Leonard Hotham as the EPA Project Coordinator. Within ten (10) calendar days of the effective date of this Consent Order, Respondent shall notify EPA, in writing, of the Project Coordinator it has selected. Respondent's legal counsel shall not serve as Respondent's Project Coordinator. Each Project Coordinator shall be responsible for overseeing the implementation of the Consent Order. The EPA Project Coordinator will be EPA's primary designated representative at the Facility. To the maximum extent possible, all communications between Respondent and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, shall be directed through the Project Coordinators.

38. Each party agrees to provide at least seven (7) calendar days written notice to the other party prior to changing Project Coordinators.

39. If EPA determines that conditions or activities at the Facility, whether or not in compliance with this Consent Order, have caused or may cause a release or threatened release of solid wastes, hazardous wastes, hazardous constituents, hazardous substances, pollutants or

contaminants which threaten or may pose a threat to the public health or welfare or to the environment, EPA may direct that Respondent stop further implementation of this Consent Order for such period of time as may be needed to abate any such release or threatened release and/or to undertake any action which EPA determines is necessary to abate such release or threatened release.

40. The absence of the EPA Project Coordinator from the Facility shall not be cause for the delay or stoppage of work.

XII. NOTIFICATION

41. Unless otherwise specified, reports, correspondence, approvals, disapprovals, notices, or other submissions relating to or required under this Consent Order shall be in writing and shall be sent as follows:

A. One (1) hard copy and one electronic copy shall to be submitted to:

Leonard Hotham
U.S. Environmental Protection Agency
Region III, Mail Code 3LC20
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029
Telephone # 215-814-5778
E-mail: hotham.leonard@epa.gov

B. One (1) copy of all documents to be submitted to EPA shall also be sent to:

Jutta Schneider
Program Manager, RCRA CA & Groundwater
Office of Remediation Programs
Telephone # 804-698-4099
E-mail: Jutta.Schneider@deq.virginia.gov

42. Any notice, report, certification, data presentation, or other document submitted by Respondent pursuant to this Consent Order which discusses, describes, demonstrates, or supports any finding or makes any representation concerning Respondent's compliance or noncompliance with any requirement of this Consent Order shall be certified by a responsible corporate officer or a duly authorized representative of a responsible corporate officer. A "responsible corporate officer" means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second quarter 1980

dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. A person is a "duly authorized representative" only if: (1) the authorization is made in writing by a person described above; (2) the authorization specifies either an individual or position having responsibility for overall operation of the regulated facility or activity (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and (3) the written authorization is submitted to the Project Coordinator designated by EPA in Section XI (PROJECT COORDINATORS) of this Consent Order.

43. The certification required by Paragraph 42, above, shall be in the following form:

I certify that the information contained in or accompanying this [type of submission] is true, accurate, and complete.

As to [the/those identified portion(s)] of this [type of submission] for which I cannot personally verify [its/their] accuracy, I certify under penalty of law that this [type of submission] and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature : _____

Name : _____

Title : _____

XIII. DELAY IN PERFORMANCE/STIPULATED PENALTIES

44. Unless there has been a written modification of a compliance date by EPA, or excusable delay as defined below in Section XV (**FORCE MAJEURE AND EXCUSABLE DELAY**), in the event that Respondent fails to comply with any requirement set forth in this Consent Order, Respondent shall pay stipulated penalties, as set forth below, upon receipt of written demand by EPA. Compliance by Respondent shall include commencement or completion, as appropriate, of any activity, plan, study or report required by this Consent Order in an acceptable manner and within the specified time schedules in and approved under this Consent Order. Stipulated penalties shall accrue as follows:

- A. For failure to commence, perform or complete work as prescribed in this Consent Order: \$1,000 per day for one to ten (10) days or part thereof of noncompliance, and \$2,000 per day for each day of noncompliance, or part thereof, thereafter;
- B. For failure to comply with the provisions of this Consent Order after receipt of notice of noncompliance by EPA: \$500 per day for one to ten (10) days or part thereof of noncompliance, and \$1,000 per day for each day of noncompliance, or part thereof, thereafter; in addition to any stipulated penalties imposed for the underlying noncompliance;
- C. For failure to submit deliverables as required by this Consent Order, or for any failure to comply with this Consent Order not described in subparagraphs A and B above: \$500 per day for one to ten (10) days or part thereof of noncompliance, and \$1,000 per day for each day of noncompliance, or part thereof, thereafter.

45. Whether or not Respondent has received notice of a violation, stipulated penalties shall begin to accrue on the date that complete performance is due or a violation occurs, and shall continue to accrue until and through the correction of the violation. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this Consent Order.

46. All penalties owed to EPA under this Section shall be due within thirty (30) calendar days of receipt of a demand for payment unless Respondent invokes the dispute resolution procedures under Section XIV, below. Such notification shall describe the noncompliance and shall indicate the amount of penalties due. Interest shall begin to accrue on the unpaid balance at the end of the thirty (30) calendar day period and shall accrue at the United States Tax and Loan Rate.

47. All penalty payments shall be made by certified or cashier's check payable to the Treasurer of the United States of America and shall be remitted to:

U.S. Environmental Protection Agency
Fines and Penalties
Cincinnati Finance Office
PO Box 979077
St. Louis, MO 63197-9000

All payments shall reference the name of the Facility, Respondent's name and address, and the EPA Docket Number of this Consent Order. Copies of the transmittal of payment shall be sent simultaneously to the EPA Project Coordinator and the Regional Hearing Clerk (3RC00), U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103-2029.

48. Respondent may dispute EPA's demand for payment of stipulated penalties for any alleged violation of this Consent Order by invoking the dispute resolution procedures below under Section XIV (DISPUTE RESOLUTION). Stipulated penalties shall continue to accrue, but need not be paid, for any alleged noncompliance which is the subject of dispute resolution during the period of such dispute resolution. To the extent that Respondent does not prevail upon resolution of the dispute, Respondent shall remit to EPA within seven (7) calendar days of receipt of such resolution any outstanding penalty payment, including any accrued interest, in the manner described above in Paragraph 48 of this Section. To the extent Respondent prevails upon resolution of the dispute, no penalties shall be payable.

49. Neither the filing of a petition to resolve a dispute nor the payment of penalties shall alter in any way Respondent's obligation to comply with the requirements of this Consent Order.

50. The stipulated penalties set forth in this Section shall not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the requirements of this Consent Order. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Consent Order.

XIV. DISPUTE RESOLUTION

51. If Respondent disagrees, in whole or in part, with any EPA disapproval, modification or other decision or directive made by the Land and Chemicals Division (LCD) pursuant to this Consent Order, Respondent shall notify the Director of LCD in writing of its objections, and the basis for such objections, within twenty one (21) calendar days of receipt of LCD's disapproval, decision or directive. Such notice shall set forth the specific points of the dispute, the position which Respondent asserts should be adopted as consistent with the requirements of this Consent Order, the basis for Respondent's position, and any matters which it considers necessary for LCD's determination. LCD and Respondent shall have an additional fourteen (14) calendar days from the receipt by LCD of the notification of objection, during which time representatives of LCD and Respondent may confer in person or by telephone to resolve any disagreement. If an agreement is reached, the resolution shall be written and signed by an authorized representative of each party. In the event that resolution is not reached within this fourteen (14) calendar day period, LCD will furnish to Respondent, in writing, its decision on the pending dispute.

52. The invocation of formal dispute resolution procedures under this Section XIV shall not extend, postpone or affect in any way any obligation of Respondent under this Consent Order unless EPA determines otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Order. In the event that Respondent does not prevail on the disputed issue, stipulated penalties shall be assessed and paid

as provided in Section XIII (DELAY IN PERFORMANCE/STIPULATED PENALTIES).

53. Notwithstanding any other provisions of this Consent Order, no action or decision by EPA, including, without limitation, decisions of the Director of Land and Chemicals Management Division, Region III, pursuant to this Consent Order, shall constitute final agency action giving rise to any right to judicial review prior to EPA's initiation of a judicial action to compel Respondent's compliance with this Consent Order.

XV. FORCE MAJEURE AND EXCUSABLE DELAY

54. Respondent shall perform the requirements of this Consent Order in the manner and within the time limits set forth herein, unless the performance is prevented or delayed by events which constitute a force majeure. Respondent shall have the burden of proving such a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of Respondent, which cannot be overcome by due diligence and which delays or prevents performance in the manner or by a date required by this Consent Order. Such events do not include increased costs of performance, changed economic circumstances, reasonably foreseeable weather conditions or weather conditions which could have been overcome by due diligence, or failure to obtain federal, state, or local permits.

55. Respondent shall notify EPA, in writing, within seven (7) calendar days after it becomes or should have become aware of any event which Respondent claims constitutes a force majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken or to be taken to prevent or minimize the delay, and an estimated timetable for implementation of these measures. Failure to comply with the notice provision of this Section shall constitute a waiver of Respondent's right to assert a force majeure claim with respect to such event. In addition to the above notification requirements, Respondent shall undertake all reasonable actions to prevent or to minimize any delay in achieving compliance with any requirement of this Consent Order after it becomes or should have become aware of any event which may delay such compliance.

56. If EPA determines that there is excusable delay because the failure to comply or delay has been or will be caused by a force majeure, the time for performance of that requirement of this Consent Order may be extended, upon EPA approval, for a period equal to the delay resulting from such force majeure. This shall be accomplished through an amendment to this Consent Order pursuant to Section XXI (SUBSEQUENT MODIFICATION). Such an extension shall not alter the schedule for performance or completion of any other tasks required by this Consent Order, unless these tasks are also specifically altered by amendment of the Consent Order. In the event that EPA and Respondent cannot agree that any delay or failure has been or will be caused by a force majeure, or if there is no agreement on the length of the extension, Respondent may invoke the dispute resolution procedures set forth in Section XIV (DISPUTE RESOLUTION).

XVI. EPA'S RESERVATION OF RIGHTS

57. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Consent Order, to require that Respondent correct and/or perform any work disapproved by EPA, and to request that Respondent perform tasks in addition to those stated in the Scope(s) of Work, the RFI, Workplan, or any other provision of this Consent Order.

58. EPA hereby reserves all of its statutory and regulatory powers, authorities, rights and remedies, both legal and equitable, including any which may pertain to Respondent's failure to comply with any of the requirements of this Consent Order, including, without limitation, the assessment of penalties under § 3013(e) of RCRA, 42 U.S.C. § 6934(e). This Consent Order shall not be construed as a covenant not to sue, or as a release, waiver or limitation of any rights, remedies, powers and/or authorities, civil or criminal, which EPA has under RCRA, or any other statutory, regulatory or common law authority.

59. Compliance by Respondent with the terms of this Consent Order shall not relieve Respondent of its obligations to comply with RCRA or any other applicable local, state, or federal laws and regulations.

60. The signing of this Consent Order and Respondent's consent to comply shall not limit or otherwise preclude EPA from taking additional enforcement action pursuant to RCRA, including, but not limited to, §§ 3008(a) or (h) of RCRA, 42 U.S.C. §§ 6928(a) or (h), or any other authority, should EPA determine that such action is warranted.

61. This Consent Order is not intended to be, nor shall it be construed as, a permit. This Consent Order does not relieve Respondent of any obligation to obtain and comply with any local, state, or federal permit or approval.

62. EPA reserves the right to perform any portion of the work consented to herein or any additional site characterization, feasibility study, and response/corrective actions it deems necessary to protect public health or welfare or the environment. EPA may exercise its authority under RCRA or any other authority to undertake or require the performance of response actions at any time. EPA reserves the right to seek reimbursement from Respondent for costs incurred by the United States in connection with any such response actions. Notwithstanding compliance with the terms of this Consent Order, Respondent is not released from liability, if any, for the costs of any response actions taken by EPA.

63. EPA reserves whatever rights it may have under any applicable law, or in equity, to recover from Respondent any costs incurred by EPA in overseeing the implementation of this Consent Order.

XVII. OTHER CLAIMS

64. Nothing in this Consent Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation, or other entity for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal or any hazardous constituents, hazardous substances, hazardous wastes, solid wastes, pollutants, or contaminants found at, taken to, or taken from the Facility.

XVIII. OTHER APPLICABLE LAWS

65. All actions required to be taken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations. Respondent shall obtain or require its authorized representatives to obtain all permits and approvals necessary under such laws and regulations.

XIX. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

66. Respondent agrees to indemnify and save and hold harmless the United States Government, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of Respondent or its agents, independent contractors, receivers, trustees, and assigns in carrying out activities required by this Consent Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Respondent or the United States under their various contracts. The United States shall not be deemed to be a party to any contract entered into by Respondent for the purpose of carrying out any activities required by this Consent Order.

XX. NOTICE OF NON-LIABILITY OF EPA

67. EPA shall not be deemed a party to any contract involving Respondent and relating to activities at the Facility and shall not be liable for any claim or cause of action arising from or on account of any act, or the omission of Respondent, its officers, employees, contractors, receivers, trustees, agents or assigns, in carrying out the activities required by this Consent Order.

XXI. SUBSEQUENT MODIFICATION

68. Except as provided in Paragraph 70, below, this Consent Order may be amended only by mutual agreement of EPA and Respondent. Any such amendment shall be in writing, shall be signed by an authorized representative of each party, shall have as its effective date the

date on which it is signed by EPA, and shall be incorporated into this Consent Order.

69. Any reports, plans, specifications, schedules, other submissions and attachments required by this Consent Order are, upon written approval by EPA, incorporated into this Consent Order. Any noncompliance with such EPA-approved reports, plans, specifications, schedules, other submissions, and attachments shall be considered a violation of this Consent Order and shall subject Respondent to the stipulated penalty provisions included in Section XIII (DELAY IN PERFORMANCE/STIPULATED PENALTIES).

70. Minor modifications in the studies, techniques, procedures, designs or schedules utilized in carrying out this Consent Order and necessary for the completion of the project may be made by written agreement of the Project Coordinators. Such modifications shall have as an effective date the date on which the agreement is signed by the EPA Project Coordinator.

71. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondent shall be construed as relieving Respondent of its obligation to obtain written approval, if and when required by this Consent Order.

XXII. SEVERABILITY

72. If any provision or authority of this Consent Order or the application of this Consent Order to any party or circumstance is held by any judicial or administrative authority to be invalid, the application of such provision to other parties or circumstances and the remainder of this Consent Order shall not be affected thereby and shall remain in full force.

XXIII. TERMINATION AND SATISFACTION

73. Respondent may request that EPA terminate this Consent Order based on the results of the implementation of the EPA approved CMIP as provided in paragraph 21 demonstrating that the constituents of potential concern in groundwater no longer exceed applicable MCLs. The provisions of this Consent Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Consent Order, including any additional tasks determined by EPA to be required pursuant to this Consent Order, have been satisfactorily completed. This notice shall not, however, terminate Respondent's obligation to comply with any continuing obligations hereunder including, but not limited to, Sections X (RECORD PRESERVATION), XVI (RESERVATION OF RIGHTS), XVII (OTHER CLAIMS), XVIII (OTHER APPLICABLE LAWS), and XIX (INDEMNIFICATION OF THE UNITED STATES GOVERNMENT).

XXIV. SURVIVABILITY/PERMIT INTEGRATION

74. Subsequent to the issuance of this Consent Order, a RCRA permit may be issued to the Facility incorporating the requirements of this Consent Order by reference into the permit.

75. No requirement of this Consent Order shall terminate upon the issuance of a RCRA permit unless such requirement is expressly replaced by a requirement in the permit.

XXV. ATTORNEYS' FEES

76. The Respondent shall bear its own costs and attorneys fees.

XXVI. EFFECTIVE DATE

77. The Effective Date of this Consent Order shall be the date on which a true and correct copy of this Consent Order, signed by EPA, is received by Respondent.

XXVII. CERTIFICATION OF SIGNATURE

78. The undersigned representative of Respondent certifies that it is fully authorized to enter into the terms and conditions of this Consent Order and to bind the party it represents to this document.

IT IS SO AGREED AND ORDERED:

DATE: 9/25/12

Abraham Ferdas

BY:
ABRAHAM FERDAS
DIRECTOR, LAND AND CHEMICALS DIVISION
UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
REGION III

DATE: 9/18/12

Joe Bourne

BY/
RESPONDENT
MR. JOE BOURNE
PLANT MANAGER FOR THE DUPONT TELJIN FILMS
FACILITY
DUPONT TELJIN FILMS

Exhibit 1 - Map of Facility

Exhibit 2 - Final Decision and Response to Comments dated August 22, 2012

Exhibit 1 – Map of Facility

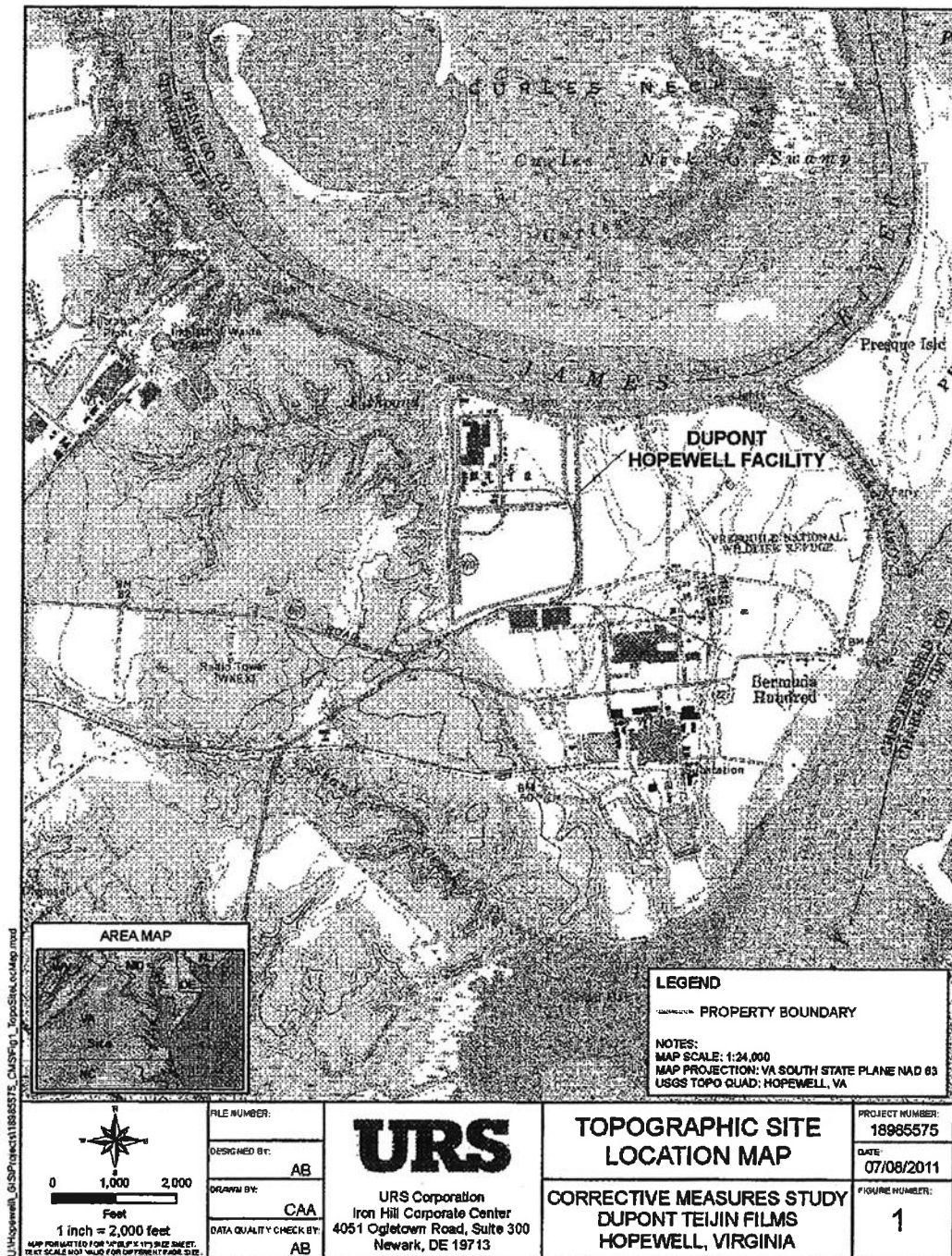


Exhibit 2 - Final Decision and Response to Comments



**UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY**

REGION III

Final Decision and Response to Comments

DUPONT TEIJIN FILM FACILITY

HOPEWELL, VIRGINIA

EPA ID NO. VAD 000 019 273

August 2012

I. Introduction

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (FDRTC or Final Decision) in connection with the DuPont Teijin Films Facility located at Hopewell, VA (Facility). The Final Decision is issued pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq.

On May 31, 2012, EPA issued a Statement of Basis (SB) in which EPA proposed a remedy for the Facility. EPA held a thirty (30)-day public comment period which began on May 31, 2012 and ended on June 30, 2012. The only comments EPA received during the public comment period were submitted by the Facility.

EPA has determined that it is not necessary to make significant modifications to the proposed remedy as set in the SB. Based on comments received during the public comment period EPA is, however, making minor modifications to the proposed remedy as described in more detail in Attachment A, EPA Response to Comments. This Final Decision and the remedy selected herein incorporate those minor modifications and clarifications.

II. Facility Background

The Facility property consists of approximately 147 acres and is surrounded by water on three sides. The property is relatively flat with a slight rise in topography from west to east. The James River lies to the north, the Appomattox River, a major tributary of the James River, lies about one mile to the east, and some undeveloped land including a wildlife refuge with a 30-acre pond lies to the west with sporadic wetlands on the northern and western perimeters. A location map is attached as Figure 1.

The Facility was constructed by ICI Polyester in the early 1970s and was purchased by E.I. du Pont de Nemours and Company (DuPont) in 1998. DuPont entered into a 50/50 joint venture with Teijin Films in 2000. Manufacturing activities have consisted of various polymer film materials with over 50 polyester film types and 8,000 products. The primary chemicals used in the manufacturing process include ethylene glycol, dimethyl terephthalate, and terephthalic acid, and historically phenolic compounds. The Facility manufactured methanol as a byproduct of the polyester process in the past; however the facility has since moved to a newer process that no longer produces methanol.

III. Summary of Environmental Investigation

ICI Polyester previously applied for a RCRA Permit in 1980 for greater than 90-day waste storage and, in 1983, withdrew its application.

Investigations conducted at the Facility included the 1993 fate and transport assessment, a 1997 Solid Waste Management Unit (SWMU) geophysical survey and investigation, and 1998 environmental site assessments. Data have also been gathered from routine Facility-wide groundwater monitoring.

In December of 2006, the Facility entered EPA's Region 3 Facility Lead Program in order to conduct RCRA Corrective Action activities.

A. Phase I RCRA Facility Investigation (RFI)

Under a 2006 Facility lead agreement between EPA and DuPont, DuPont conducted a Phase I RCRA Facility Investigation (Phase I RFI). Field activities associated with the Phase I RFI were initiated in March 2008 and completed in May 2008. The findings from the investigation were presented in the Phase I RCRA Facility Investigation Report submitted to EPA in October 2008. The specific objectives of the Phase I RFI implemented at the Facility were as follows:

- Characterization of corrective action units where historical releases are known or suspected to have occurred.
- Update of the current understanding of Facility-wide hydrogeologic conditions within the upper and lower aquifers relating to physical and chemical characteristics of the aquifers.
- Evaluation of the integrity and usefulness of the 16 existing shallow, two water supply, and six deep groundwater monitoring wells.
- Collection of data necessary to evaluate and meet Environmental Indicators (EIs) which conforms with Corrective Action program goals (see Section III. C.).

Activities completed to meet these objectives included the following: (1) a geophysical survey; (2) monitoring well development; (3) measurement of groundwater elevations; (4) collection of groundwater samples from four groundwater monitoring points, 17 newly installed and 22 existing monitoring wells and two production wells; and (5) collection of 55 surface and subsurface soil samples from the following six SWMUs and six Areas of Concern (AOCs). AOC A consists of two parts which are the perimeter area and the manufacturing area. (See Figure 2 for SWMU and AOC locations):

- SWMUs 1, 2, 3, 4, 5, and 8
- AOCs A, B, C, D, G, and H.

Soil and groundwater samples were analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), metals, 1,1 biphenyl, diphenyl ether, acetaldehyde, and glycols.

Water concentrations were screened against Drinking Water Standards (Federal Maximum Contaminant Level (Federal MCLs) promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 CFR Part 141), or EPA Region III Risk-Based Concentration (RBCs) for tap water (designated as Screening Levels for tap water (SLs)) for chemicals for which there are no applicable Federal MCLs.

Soil concentrations were screened against EPA RBCs for residential soil and industrial soil (designated as soil SLs). EPA also has Soil Screening Levels to protect groundwater (SSLs) and soil concentrations were also screened against these levels. DuPont proposed, and EPA

approved, risk-based screening levels for diphenyl ether since EPA had not calculated screening levels for this contaminant.

The following SWMUs and AOC were investigated in the Phase I RFI:

1. AOC A – Manufacturing Area Groundwater Characterization

Ten existing shallow monitoring wells (MW-2 thru MW-9, MWS-01 and MWS-02), North production well, and six wells (MW-104A, MW-105A, MW-106A, MW-107A, MW-107B and MW-107C) were installed by DuPont's contractor and used in the evaluation (see Figure 3 for well locations).

a. Groundwater

VOCs, six SVOCs, one glycol, 15 metals, 1,1-biphenyl and diphenyl ether were detected above Method Detection Limits (MDLs) in the groundwater samples collected. MDLs are the lowest quantity of a substance that can be accurately reported.

Of the organic constituents detected, three VOCs (chloroform, tetrachloroethylene, and trichloroethene), three SVOCs (1,4-dioxane, diallate, and naphthalene), one glycol (ethylene glycol), 1,1-biphenyl and diphenyl ether exceeded screening criteria.

Chloroform, 1,4-dioxane, and diphenyl ether most frequently exceeded screening criteria. Chloroform was detected above the tap water SL (0.19 micrograms/liter (ug/L)) in seven locations. Concentrations for chloroform ranged from 0.2 ug/L to 1.7 ug/L, which are below the Federal MCL (80 ug/L). 1,4-Dioxane was detected above the tap water SL (6.1 ug/L) in seven locations. Concentrations ranged from 9 ug/L to 89 ug/L. The highest concentration (89 ug/L) was observed in monitoring well location MW-04 located downgradient of SWMU 1.

Diphenyl ether was detected above the screening criterion in six locations. The highest concentration (9,000 ug/L) was observed in monitoring well location MW-04 located near the Dowtherm heaters of SWMU 1.

Of the inorganic constituents detected, antimony, arsenic, cadmium, cobalt, lead, mercury, thallium and vanadium exceeded screening criteria. Of these, arsenic exceeded the tap water SL in 14 locations. Concentrations ranged from 0.81 ug/L to 10.9 ug/L. The highest concentration (10.9 ug/L), which was slightly above the Federal MCL (10 ug/L), was observed at monitoring well location MW-4. Cobalt exceeded the tap water SL in 15 locations. Concentrations ranged from 2.2 ug/L to 171 ug/L. The highest concentration was observed at monitoring well location MWS-01 located west of SWMU 8.

Ethylene glycol was detected in MWs-100A, B and C at concentrations of 15,000 ug/L, 15,000 ug/L and 19,000ug/L, respectively. Additionally, tetrachloroethylene was detected in well pair MW-101A and DMW-4 at concentrations of 30 ug/L and 23 ug/L, respectively.

2. AOC A - Perimeter Area Groundwater Characterizations

Six existing shallow wells (MW-1, MW-10, MW-11, SMW-1, SMW-2, and SMW-3), six existing deep wells (DMW-1 through DMW-6), the South production well, and 11 installed wells (MW-100A/B/C, MW-101A, MW-102A/B, MW-103A/B, MW-108A, MW-109A and MW-110A) were used in the evaluation.

a. Groundwater

Nineteen VOCs, two SVOCs, diphenyl ether, three glycols and 14 metals were detected above MDLs in the groundwater samples collected.

Of the organic constituents detected, eight VOCs (1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, chloroform, cis-1,2 dichloroethene, tetrachloroethylene, trichloroethene, and vinyl chloride), three glycols (ethylene glycol, diethylene glycol, and triethylene glycol), and two SVOCs (1,4-dioxane and diallate) exceeded screening criteria. The glycols were concentrated around the western and northern perimeters of the Facility, while the chlorinated constituents were concentrated around the eastern portion of the Facility.

The highest concentration of ethylene glycol (26,000 ug/L) along the perimeter of the Facility was observed at monitoring well location MW-100A located near SWMU 5.

The highest concentrations of total chlorinated constituents in the shallow aquifer are located at MW-101A adjacent to a cemetery, while the highest concentration in the deep aquifer is located in DMW-6 near the southeastern fence line.

Of the inorganic constituents, 10 metals exceeded screening criteria. Arsenic concentrations exceeded criteria in 11 of the 23 wells. Concentrations ranged from 0.79 ug/l to 6.2 ug/l, which are below the Federal MCL (10 ug/L). Cobalt exceeded criteria in 13 of 23 wells, with concentrations ranging from 4.2 ug/L to 61.8 ug/L. The highest concentration for both constituents was observed at upgradient location SWM-3.

3. SWMU 1 and AOC B (Tank Farm and Glycol Hot Well)

A total of 18 soil samples (surface and subsurface) were collected from nine boring locations installed at SWMU 1. Groundwater was sampled from six existing groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6).

a. Soil

No constituents were detected in soil above screening criteria (Screening Levels (SLs), Soil Screening Levels (SSLs)) or Facility specific soil background concentrations for inorganics.

b. Groundwater

In groundwater, 1,1 biphenyl and diphenyl ether exceeded the screening criteria (tap water SLs) in three locations. Three SVOCs (diallate, naphthalene, and 1,4-dioxane) were also detected above screening criteria.

Antimony, arsenic, cadmium and cobalt were also detected above the screening criteria in groundwater. Arsenic and cobalt exceeded the screening criteria in five of the six locations sampled. Arsenic was detected above the tap water SL and the Federal MCL in one location.

4. SWMU 2 (Wastewater Incinerator)

A total of four soil samples (surface and subsurface) were collected from two boring locations installed at the SWMU. One groundwater monitoring well (MW-105A) was installed in the upper aquifer at the SWMU. Groundwater samples were collected from three groundwater monitoring wells (MW-105A, MW-7 and MW-8).

a. Soil

In the soil samples, no organic constituents were detected above screening criteria. Of the inorganic constituents detected, only antimony was detected above SLs or SSLs and Facility-specific soil background concentrations. Antimony was detected in surface soil at a boring location above the SL for residential soil but below the SL for industrial soil.

b. Groundwater

In groundwater, one VOC (chloroform), one SVOC (1,4-dioxane), and diphenyl ether exceeded the screening criteria at one well. Arsenic was detected above the tap water SL but below the Federal MCL in two locations. Cobalt exceeded the tap water SL in all three locations. Arsenic and cobalt concentrations at the SWMU were less than those observed at an upgradient well location.

5. SWMU 3 (Former Construction Landfill)

A total of eight soil samples were taken from four soil borings installed at SWMU 3. Groundwater was sampled from two existing groundwater monitoring wells (MW-10 and MW-11).

a. Soil

Nine VOCs, 18 SVOCs, two glycols, 1,1 biphenyl and diphenyl ether were detected in the eight soil samples collected from SWMU 3. In addition, 16 metals were detected. Of the organic constituents detected, the following four exceeded SLs for residential soil: acetaldehyde, and three polynuclear aromatic hydrocarbons (PAHs) [benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene]. The three PAH exceedances were noted in the surface soil sample interval at one location. The acetaldehyde exceedance was noted at a depth of 16 feet below grade surface (bgs), where direct contact is unlikely to occur. None of the constituents exceeded SLs for industrial soil.

Acetaldehyde, tetrachloroethylene, 1,4 dioxane, benzo(a)pyrene, pentachlorophenol, diethylene glycol and ethylene glycol exceeded SSLs. With the exception of benzo(a)pyrene, exceedances were noted in sample intervals directly above the water table. However, as noted in the discussion below, only tetrachloroethylene and diethylene glycol were detected in groundwater above screening criteria.

Four inorganic constituents (antimony, arsenic, cobalt, and thallium) exceeded the SLs for residential soil. However, only arsenic exceeded the SL for industrial soil (1.6 milligrams/liter (mg/kg)), ranging in concentration from 1.97 mg/kg to 8.82 mg/kg.

Arsenic exceeded the SSL (0.026 mg/kg) in all four boring locations. Cobalt exceeded the SSL (9.8 mg/kg) in one boring location (SWMU3-SB1) at a concentration of 11.7 mg/kg. Similar to other units, arsenic and cobalt concentrations are considered consistent with background.

b. Groundwater

Three VOCs (chloroform, tetrachloroethylene, and trichlorofluoromethane), one SVOC (1,4-dioxane) and one glycol (diethylene glycol) were detected above the MDLs. Six metals were also detected.

Of the organic constituents detected, chloroform and tetrachloroethylene exceeded the screening criteria in both MW-10 and MW-11. Diethylene glycol exceeded the criteria in MW-11 only.

Of the inorganic constituents detected, arsenic exceeded the screening criteria in both monitoring locations. Antimony exceeded screening criteria in MW-11 only; however, concentrations of both constituents were below Federal MCLs.

6. SWMU 4 (Former Hazardous Waste Storage Pad)

One soil boring was installed at each side of the SWMU. Surface soil samples (from a depth of 0 to 1 foot bgs) were collected from each location.

a. Soil

No constituents were detected in soil above screening criteria and Facility-specific soil background concentrations for inorganics.

7. SWMU 5 (Wastewater Treatment Plant)

Soil samples (surface and subsurface) were collected from three soil borings installed at the SWMU. Groundwater samples were collected from three monitoring wells: one in the upper aquifer, one in the intermediate zone, and one in the lower aquifer, installed within the general area of the unit (MW-100A, MW-100B and MW-100C).

c. Soil

In the soil samples, two polynuclear aromatic hydrocarbons (PAHs) [benzo(b)fluoranthene and benzo(a)pyrene] were detected above the SL for residential soil. Neither constituent was detected above the SL for industrial soil. Benzo(a)pyrene was detected above the SSL in surface soil but was not detected at the subsurface soil sample collected directly above the water table. None of the inorganic constituents were detected above screening criteria (SLs or SSLs) and Facility specific soil background concentrations.

d. Groundwater

In groundwater, two VOCs (chloroform and tetrachloroethylene), three glycols (ethylene glycol, diethylene glycol and triethylene glycol) and two metals (arsenic and cobalt) exceeded the screening criteria. Chloroform, ethylene glycol, and diethylene glycol exceeded screening criteria in all three wells that were installed at the SWMU. Arsenic was detected above the tap water SL but below the Federal MCL at one well. Cobalt exceeded the tap water SL in two wells. Concentrations at the SWMU were less than those observed in an upgradient well.

8. SWMU 8 (Pack Shop Pump)

Groundwater samples were collected from two existing groundwater monitoring wells (MWS-01 and MWS-02).

a. Groundwater

One SVOC (1,4-dioxane) and four metals (antimony, arsenic, cadmium, and cobalt) were detected in groundwater above screening criteria. Of the metals detected, only cadmium was detected above the tap water SL and Federal MCL.

9. AOC C (Wastewater Collection Sump)

Two soil borings and one monitoring well (MW-104A) were installed at the AOC. A total of four soil samples (surface and subsurface) were collected from the two boring locations. Groundwater samples were collected from the monitoring well.

a. Soil

In soil, no organic constituents were detected above residential SLs for soil. One SVOC (diallate) exceeded the SSL in one location at the surface soil sample interval (0.5 to 1.5 feet below grade surface (bgs)). However, the constituent was not detected in the subsurface soil sample interval collected from 8 to 10 feet bgs.

Of the inorganic constituents detected, only cobalt was detected above the SSL and Facility-specific soil background concentrations in the shallow soil sample collected at a depth of 1.75 to 3 feet bgs. However, cobalt was detected below the screening criterion in the deeper soil interval collected from 7 to 10 feet bgs at the location.

b. Groundwater

In groundwater, one VOC (chloroform) was detected above the tap water SL but was less than the Federal MCL. Arsenic and cobalt were also detected above screening criteria. Arsenic was detected above the tap water SL but was less than the Federal MCL. Cobalt was detected above the tap water SL but less than concentrations observed in upgradient location SMW-03.

10. AOC D (Former Underground Storage Tank (UST) Locations)

Two soil borings and one monitoring well (MW-106A) were installed at the AOC. A total of four soil samples (surface and subsurface) were collected from the two soil borings. Groundwater was also collected from each of the soil boring locations. Groundwater was

sampled from three groundwater monitoring wells: (MW-106A, MWS-02 and MW-08).

a. Soil

In the soil samples, three PAHs [benzo(a)anthracene, benzo(b)fluoranthene and benzo(a)pyrene] exceeded the residential SL for soil. None of the constituents exceeded the industrial SL for soil. One PAH [benzo(a)pyrene] exceeded the SSL in the surface soil sample interval but was non-detect in the deeper soil sample collected from a depth of 8 to 12 feet bgs. No inorganic constituents were detected in soil above screening criteria or in Facility-specific soil background concentrations.

b. Groundwater

In groundwater, one SVOC (1,4-dioxane) and two metals (arsenic and cobalt) exceeded screening criteria. 1,4-Dioxane was also detected above the screening criterion in the groundwater samples collected from the three monitoring well locations. In addition, one VOC (chloroform), one glycol (ethylene glycol), and diphenyl ether exceeded screening criteria in the groundwater samples collected. Most of these exceedances were detected in one well.

Of the inorganic constituents detected, arsenic and cobalt exceeded screening criteria. Arsenic was detected above the tap water SL, but less than the Federal MCL. Cobalt exceeded the tap water SL in all three locations but was less than concentrations observed at an upgradient location.

11. AOC G (Underground Wastewater Line)

Two soil borings were installed within the AOC. A total of four soil samples (surface and subsurface) were collected from the two boring locations. Groundwater was also sampled from each boring.

a. Soil

In soil, no constituents were detected above screening criteria and Facility-specific soil background concentrations for inorganics.

b. Groundwater

No organic constituents were detected in groundwater. Of the metals detected, only cobalt was detected above the tap water SL.

12. AOC H (Fuel Oil Tank #1)

Groundwater was sampled from existing monitoring well MW-9 and analyzed for VOCs, SVOCs, and metals.

a. Groundwater

No organic constituents were detected in the monitoring well. Of the inorganic constituents detected, arsenic and cobalt were detected above screening criteria. Arsenic was detected above the tap water SL but below the Federal MCL. Cobalt was detected at above the tap water SL but below concentrations observed in the upgradient location.

B. Phase II RFI

In 2010 DuPont conducted a Phase II RCRA Facility Investigation (Phase II RFI), in which it addressed data gaps identified in the Phase I RFI, specifically focusing on Facility-wide groundwater contamination.

1. Glycol Detections in Groundwater

a. Groundwater

During the Phase I RFI, three glycol isomers (ethylene glycol, diethylene glycol or triethylene glycol) were detected at estimated concentrations above tap water SLs in 13 monitoring well locations (DWM-1 through DWM-6, MW-1, MW-2, MW-3, MW-7, MW-100A, MW-100B and MW-100C). However, during the Phase II RFI, none of these isomers was detected in the monitoring wells in 2010. This result is not unexpected since glycols have reported half-lives in groundwater of one day to several weeks. During the Phase II RFI, glycol detections were limited to the propylene glycol isomer, at concentrations below the tap water SL. Propylene glycol was not previously detected in the Phase I RFI monitoring event conducted in April 2008.

2. Background Soil Quality

a. Soil

Surface and subsurface soils samples were collected from six soil boring locations. Boring locations were installed in portions of the Facility where manufacturing operations have not taken place. Soil samples from each location were analyzed for metals.

The soil inorganic analytical data were used to calculate a 95% upper tolerance limit (UTL), which represents the upper background concentration limit. Any concentrations that exceed this value would not be considered indicative of background concentrations. UTLs were calculated for two soil types: the shallow silty clay/clayey silt/clay and the deeper sand/silty sand. EPA's ProUCL software program was used to calculate the UTL. For analytes with non-detect results, the reporting limit was used in the calculation.

UTLs were not calculated for constituents that were not detected in any background soil sample (selenium and silver in surface and subsurface soil and antimony in subsurface soil) or were detected at a low frequency (mercury and thallium in subsurface soil). Antimony, arsenic, and cobalt are the primary inorganic constituents that were detected above screening criteria (SLs or SSLs) in the Phase I RFI. Based on a comparison of the Phase I RFI data to the Facility-specific soil background concentrations, arsenic was not detected above the 95% UTL in surface or subsurface soil. Similarly, antimony and cobalt detections above the 95% UTL were limited to one location for each analyte in shallow soil samples collected (defined less than 3 ft bgs). Therefore, inorganic concentrations observed at the Facility are considered consistent with background and are not indicative of a release from any SWMU or AOC.

3. Chlorinated Compounds in area of SWMU-6

a. Soil

To evaluate for the presence of an on-site source of chlorinated compounds, 35 soil gas samples were collected during the Phase II RFI and analyzed for a target chlorinated compound analyte list.

A total of four chlorinated compounds [tetrachloroethylene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (TCA), and 1,1-dichloroethene (DCE)], were detected in the soil gas samples at 13 locations during the Phase II RFI Stage I investigation with masses slightly exceeding their respective detection limits. PCE was the most frequently detected chlorinated compound (detected at 10 locations).

Based on the soil-gas sampling results, five Phase II RFI locations were selected for surface and subsurface soil sampling during the Phase II effort. A macro-core soil sampler was advanced by direct push technology (DPT) to the top of the water table at each of the five locations. Surface soil samples were collected at approximately one foot bgs, and subsurface soil samples were collected at the interval above the water table that registered the highest organic vapor readings based upon field screening measurements with a photo-ionization detector (PID). Subsurface soil sample depths ranged from 20 to 30 feet bgs depending on location.

A contouring analysis of the soil-gas data indicated that the area of highest target compound concentrations was located in the vicinity of SWMU-6. However, chlorinated VOCs were not detected in soil samples collected within this area or other portions of the grid investigated. Only acetone was detected in the Phase II RFI soil samples. No exceedance of soil screening criteria (SLs or SSLs) was observed.

b. Groundwater

Chlorinated VOCs including PCE and its associated degradation products (such as TCE, 1,2-DCE, and vinyl chloride) were detected in the upper aquifer near SWMU-6 during the Phase II RFI groundwater monitoring event. PCE exceeded its Federal MCL in two wells (MW-101A and MW-102A). Overall concentrations observed at these locations are consistent between the Phase II and Phase I RFI events. No chlorinated compounds were detected in deep monitoring wells in this portion of the Facility.

4. SWMU 3

SWMU 3 was an early construction disposal pit, which consisted of two trenches approximately 40 feet long, 10 feet wide, and approximately 20 feet deep. Materials reportedly placed in this area consisted of pallets, construction debris (metal wire, fencing, and nails), paper products, film rolls, polyester chip, and buried drums of degraded polymer. During construction activities associated with a warehouse (1985), some waste materials (including all drums) were removed.

a. Soil

A geophysical survey that identified soil anomalies was completed in 1997. Four soil borings were collected from this unit in 1998 in an attempt to identify the geophysical anomalies.

Soil analytical results at concentrations above respective laboratory limits were noted for two compounds (acetone and 2-butanone); however, acetone was also detected in the associated laboratory blank.

b. Groundwater

As part of the Phase II RFI Stage II activities at SWMU 3 area, three borings were installed utilizing DPT techniques. The borings were biased towards previous locations where the highest soil detections were observed in the subsurface soil samples collected during the Phase I RFI.

Groundwater samples were collected from each location and analyzed for VOCs, SVOCs, metals (total), 1,1 biphenyl, diphenyl ether, acetaldehyde, and glycols.

Acetaldehyde, PCE, and 1,4-dioxane were detected in the Phase II RFI groundwater samples. Acetaldehyde was detected in each of the three locations at estimated concentrations ranging between 35 and 39 $\mu\text{g/L}$, which was above the tap water SL (2.2 $\mu\text{g/L}$). However, acetaldehyde was also detected in water used to develop the wells at an estimated concentration of 58 $\mu\text{g/L}$. 1,4-dioxane was detected in two of the three locations at an estimated concentration of 3 $\mu\text{g/L}$ and a concentration of 5 $\mu\text{g/L}$, which were above the tap water SL (0.67 $\mu\text{g/L}$). PCE was detected at a concentration of 0.2 $\mu\text{g/L}$ in one location which is below the Federal MCL (5 $\mu\text{g/L}$).

In addition to the organic constituents noted above, one additional organic constituent (chloroform) was detected above screening criteria. Chloroform was detected in each of the three locations at concentrations ranging between 0.4 $\mu\text{g/L}$ and 0.8 $\mu\text{g/L}$, below the Federal MCL (80 $\mu\text{g/L}$). Similar to acetaldehyde, chloroform was detected in the development water sample.

5. Occurrence of Chlorinated Compounds from an Off-Site Upgradient Source

a. Groundwater

Groundwater samples were collected from six upgradient wells (MW-110A, DMW-6, MW-201A/B and MW-202A/B) of the Facility and analyzed for VOCs, SVOCs, metals (total and dissolved), 1,1 biphenyl, diphenyl ether, acetaldehyde, and glycols near AOC E.

Analytical detections of the six monitoring wells sampled, chlorinated organic constituents were most frequently detected in the upgradient lower aquifer near AOC E. At this location, PCE and its degradation products TCE and vinyl chloride were detected below their respective Federal MCLs. PCE and its breakdown products were not detected in the nearby shallow well and other nearby lower aquifer wells sampled in the area.

Three additional chlorinated VOCs (chloroform, 1,1-DCA, and 1,2-DCA) and one SVOC (1,4-dioxane) were also detected. Chloroform was detected in associated shallow well upgradient of AOC E, and chloroform along with its associated trihalomethane and bromodichloromethane was detected and at a nearby downgradient shallow well. Concentrations were below their respective Federal MCLs. The presence of trihalomethanes is likely due to municipal water sources rather than a release from Facility operations.

The occurrence of the chlorinated VOCs in an upgradient deep well and the absence of these compounds in the nested shallow well and other shallow monitoring wells in the area further support the presence of an off-site source of chlorinated VOCs in the lower aquifer.

6. AOC A - Manufacturing Area Groundwater Characterization

a. Groundwater

Fourteen existing shallow monitoring wells (MW-2, MW-4, MW-5, MW-6, MW-8, MW-9, MWS-01, MWS-02, MW-104A, MW-105A, MW-106A, MW-107A, MW-107B, and MW-107C), North production well, and two newly installed wells (MW-203A and MW-203B) were used in the evaluation. Eighteen VOCs, 21 SVOCs, 1,1-biphenyl, diphenyl ether, one glycol, and 14 metals were detected above MDLs in the groundwater samples collected.

Of the organic constituents detected, five VOCs (1,1-DCA, acetaldehyde, chloroform, PCE, and vinyl chloride), 1,1-biphenyl, diphenyl ether and four SVOCs (1,4-dioxane, benzo[a]pyrene, dibenz[a,h]anthracene and naphthalene) exceeded screening criteria.

Chloroform, PCE and 1,4-dioxane most frequently exceeded screening criteria. Chloroform concentrations ranged from 0.1 µg/L to 1.7 µg/L, which are below the Federal MCL (80 µg/L). PCE was detected above the Federal MCL (5 µg/L) at the North Well. 1,4-Dioxane concentrations ranged from 7 µg/L to 18 µg/L. The highest concentration (18 µg/L) was observed in the upper aquifer monitoring well location located down gradient of SWMU 1 and AOC B.

Diphenyl ether was detected above the DuPont Facility-specific screening criteria in three upper aquifer locations (DuPont proposed, and EPA, approved, risk-based screening criteria for Diphenyl ether since EPA had not calculated one for this contaminant). The highest concentration (5,900 µg/L) was observed in a monitoring well location located near the DuPont heaters of SWMU 1. The diphenyl ether plume extends in a relatively compact area extending around SWMU 2. The plume depicts the same pattern observed during the Phase I RFI monitoring event.

Of the inorganic constituents detected, total and dissolved antimony, arsenic, cadmium, cobalt and mercury, and total vanadium exceeded tap water SLs. Of these, total and dissolved cobalt and total arsenic exceeded the tap water SL in 18 locations. Total cobalt concentrations ranged from 2.3 µg/L to 55.7 µg/L, which were above the tap water SL (1.1 µg/L). Cobalt does not have a Federal MCL. The highest total cobalt concentration was observed west of SWMU 8. Dissolved cobalt concentrations were similar. Total arsenic concentrations ranged from 1.1 µg/L to 6.6 µg/L, which are below the Federal MCL (10 µg/L).

7. AOC A - Perimeter Area Groundwater Characterizations

a. Groundwater

Seventeen existing shallow wells (MW-1, MW-10, MW-11, SMW-1, SMW-2, SMW-3,

MW-100A/B/C, MW-101A, MW-102A/B, MW-103A/B, MW-108A, MW-109A, and MW-110A), five existing deep wells (DMW-1, DMW-2, DMW-3, DMW-5, and DMW-6), South production well, and five newly installed wells (MW-200B, MW-201A/B, and MW-202A/B) were used in the evaluation. Eighteen VOCs, 13 SVOCs, diphenyl ether, one glycol (propylene glycol), and 13 metals were detected above MDLs in the groundwater samples collected.

Of the organic constituents detected, eight VOCs (1,1-DCA, 1,2-DCA, chloroform, cisacetaldehyde, bromodichloromethane, PCE, TCE, and vinyl chloride), and three SVOCs (1,3-dinitrobenzene, 1,4-dioxane, and benzo[a]pyrene) exceeded screening criteria.

Of the VOCs, chloroform, bromodichloromethane, and PCE most frequently exceeded screening criteria. Similar to the manufacturing area, chloroform concentrations were low (between 0.1 µg/L and 3.9 µg/L), which are below the Federal MCL (80 µg/L). Similarly, bromodichloromethane concentrations were low (between 0.1 µg/L and 0.4 µg/L), which are below the Federal MCL (80 µg/L). The presence of trihalomethanes (which includes chloroform and bromodichloromethane) is likely attributable to municipal water sources rather than a release from Facility operations. Both of these constituents were detected in Facility tap water. Tap water was used for well development of the newly installed monitoring well locations.

PCE was detected in seven locations. PCE concentrations ranged between 0.3 µg/L to 22 µg/L. The highest concentration in the upper aquifer was noted at a monitoring well location which is located south of SWMU 6. The PCE concentration at this location (22 µg/L) was above the Federal MCL (5 µg/L). Exceedance of the Federal MCL was also noted in a upper aquifer monitoring well location which is located north of SWMU 6 adjacent to a cemetery. Phase II RFI activities did not identify a potential on-site source area for chlorinated constituents in the upper aquifer in this area. The highest PCE concentrations in the lower aquifer (3 µg/L) were noted at a upgradient monitoring well location, confirming a potential off-site source area for the presence of the chlorinated solvents (PCE and its degradation products) in the deeper aquifer.

Each of the SVOCs detected above tap water SLs were detected infrequently (one out of 30 samples) and were observed in two deep monitoring well locations, one of which is upgradient. No additional evaluation of these exceedances was conducted.

Of the inorganic constituents, five metals (total and dissolved arsenic, cobalt, mercury, total antimony, and total vanadium) exceeded screening criteria. Total arsenic concentrations above the Federal MCL (10 µg/L) were limited to two locations. Dissolved arsenic concentrations at both locations were either non-detect or were detected below the Federal MCL. Total cobalt exceeded the tap water SL (1.1 µg/L) in 9 of 27 locations, with concentrations ranging from 3 µg/L to 32.8 µg/L. Dissolved cobalt concentrations were observed to be similar. The highest concentration was observed near SWMU 6. Cobalt does not have a Federal MCL.

8. Monitoring Wells in the AOC B Area

a. Groundwater

Groundwater samples were collected from a shallow and lower aquifer well pair (MW-203A/B) and analyzed for VOCs, SVOCs, metals (total and dissolved), 1,1 biphenyl, diphenyl

ether, acetaldehyde, and glycols.

Consistent with Phase I RFI findings, three Facility-related constituents (diphenyl ether, biphenyl, and 1,4-dioxane) were detected during the Phase II RFI shallow well monitoring. Concentrations of each constituent were above screening criteria (tap water SLs or the DuPont-derived tap water SL). None of these SVOCs was detected in the paired deep well (MW-203B).

Two chlorinated VOCs (chloroform and vinyl chloride) were detected in the deep well above tap water SLs but below their respective Federal MCLs. No other organic exceedances were noted.

Total and dissolved cobalt were detected above the tap water SL in both the shallow and deep monitoring well. Cobalt concentrations ranged between 7.9 µg/L and 10.9 µg/L, which are above the tap water SL (1.1 µg/L). Total and dissolved arsenic and total vanadium were also detected in the deep monitoring well. Arsenic concentrations ranged between 1.5 and 1.9 µg/L, which are below the Federal MCL (10 µg/L). Inorganic concentrations observed at the nested well pair were consistent with those observed in the upgradient well pair.

C. Environmental Indicators (EIs)

EPA has set national goals to measure progress toward meeting the nation's major environmental goals. For Corrective Action, EPA evaluates two key environmental indicators for each Facility: (1) current human exposures under control and (2) migration of contaminated groundwater under control. EPA determined that the Facility met these indicators on January 31, 2011.

D. Corrective Measures Study (CMS)

The Corrective Measures Study (CMS) was submitted to EPA and VADEQ for review on August 29, 2011. The CMS was approved by EPA on November 21, 2011. Consistent with EPA guidance entitled "Corrective Action for Releases From Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule," 61 Fed. Reg. 19431, May 1, 1996, in the CMS, DuPont evaluated various possible remedial alternatives against the three threshold criteria and seven balancing criteria.

The CMS is based on investigation results presented in the Phase II RFI, which was approved by the EPA in a letter dated March 16, 2011. Based on the Phase II RFI, groundwater is the only medium of concern. However, the groundwater plume appears to be stable (not migrating), and concentrations of constituents of potential concern (COPCs) are either stable or declining over time. Groundwater is not used at the Facility for drinking water, and no down gradient users of off-site groundwater exist between the Facility boundary and the James River.

In its CMS, DuPont recommended groundwater monitoring to ensure protection of off-site receptors combined with institutional controls to prevent exposure for workers and the public at the Facility. Facility controls already in place at the DuPont Teijin Facility include fencing, access controls by Facility security, and existing paving, which prevents worker exposure to soil

in the manufacturing area. Likewise, groundwater is not being used for potable purposes at the DuPont Teijin Facility or at neighboring facilities. Also DuPont's internal permitting process at its Facility requires approval for any intrusive activities (boring, drilling, excavation, etc.) into the soils or building foundations at the Facility. The sampling program includes annual sampling of 16 wells. The monitoring program includes six wells along the James River to monitor for migration in the north, three wells along the eastern perimeter of the Facility to monitor for migration onto the Facility from source(s) located off-site, and seven wells located within the diphenyl ether and PCE plumes to monitor concentration trends over time.

E. Summary

Investigation activities associated with the Phase I RFI were completed in the spring of 2008 and the Phase II RFI report was submitted to EPA and VADEQ in late December, 2010, and approved by EPA on March 16, 2011.

Table 1 provides a comparison of constituents detected in Facility-wide groundwater to the screening criteria (Federal MCLs or tap water SLs). Monitoring well locations are detailed in Figure 3. As shown in Table 1, 11 VOCs, 12 SVOCs, biphenyl, diphenyl ether, and 11 metals (total and dissolved) were identified as constituents of potential concern (COPCs) in groundwater with their concentrations. COPCs most frequently detected above tap water SLs and Federal MCLs (where applicable) included three organics (tetrachloroethylene [PCE], 1,4-dioxane, one DuPont constituent [diphenyl ether]) and two metals (total cobalt and total arsenic).

IV. Corrective Action Objectives

EPA's Corrective Action Objectives for the Facility are the following:

1. Soils

EPA has determined that EPA Region 3's Screening Levels for Industrial Soils for direct contact with soils are protective of human health and the environment for individual contaminants at this Facility, provided that the Facility is not used for residential purposes. Therefore, EPA's Corrective Action Objective for Facility soils is to control exposure to the hazardous constituents remaining in soils by requiring the compliance with and maintenance of land use restrictions at the Facility.

2. Groundwater

EPA's Corrective Action Objectives for Facility groundwater is to control exposure to the hazardous constituents remaining in the groundwater by requiring the continued implementation of the groundwater monitoring program, compliance with and maintenance of groundwater use restrictions at the Facility to prevent off-site migration of contaminants while levels remain above Federal MCLs and SLs.

V. Final Remedy

The final (or selected) remedy for the Facility consists of land use restrictions (institutional controls) and the continued implementation of a groundwater monitoring program already in place until groundwater clean-up standards are met. The goal of the final remedy is to ensure the overall protection of human health and the environment.

A. Soils

Based on the available information, there are currently no unacceptable risks to human health and the environment via the soil or vapor intrusion pathways for the present and anticipated use of the property (industrial use). Because contaminants will remain in Facility soils above levels appropriate for residential uses, the final remedy for soils is institutional controls (See Section C) to restrict the Facility to non-residential uses.

B. Groundwater - Long-Term Monitoring

Based on the RFI, the groundwater plume appears to be stable (not migrating), and concentrations of constituents of potential concern (COPCs) are either stable or declining over time. Groundwater is not used on the Facility for drinking water, and no downgradient users of off-site groundwater exist between the Facility boundary and the James River. Therefore, the final remedy for the groundwater is the combination of groundwater use restriction (See Section C) and the continuation of a groundwater monitoring program already in place until groundwater clean-up standards are met.

C. Institutional Controls

ICs are non-engineered instruments such as administrative and legal controls that minimize the potential for human exposure to contamination and/or protect the integrity of the decision by limiting land or resource use. Under this final decision, some contaminants remain in the groundwater and soil at the Facility above levels appropriate for residential uses. Because some contaminants remain in the soil and groundwater at the Facility at levels which exceed residential use, EPA's final decision requires the compliance with and maintenance of land and groundwater use restrictions.

The ICs shall include, but not be limited to, the following land and groundwater use restrictions:

1. Groundwater at the Facility shall not be used for any purpose other than 1) industrial use as non-contact cooling water; and 2) the operation, maintenance, and monitoring activities required by VADEQ and/or EPA, unless it is demonstrated to EPA, in consultation with VADEQ, that such unanticipated use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and EPA, in consultation with VADEQ, provides prior written approval for such use;
2. The Facility property shall not be used for residential purposes unless it is demonstrated

to EPA, in consultation with VADEQ, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy, and EPA, in consultation with VADEQ, provides prior written approval for such use;

3. All earth moving activities, including excavation, drilling and construction activities in the SWMUS and/or areas of concern at the Facility shall be conducted in a manner that such activity will not pose a threat to human health and the environment or adversely effect or interfere with the final remedy, and EPA, in consultation with VADEQ, provides prior written approval;

4. The Property will not be used in a way that will adversely affect or interfere with the integrity and protectiveness of the final remedy;

5. No new wells will be installed on Facility property without prior written approval in consultation with VADEQ, from EPA.

6. Owner must provide EPA and VADEQ with a "Certified, True and Correct Copy" of any instrument that conveys any interest in the Facility property or any portion thereof. Any such conveyance must provide for the continuation of the IC until EPA, in consultation with VADEQ, determines the IC is no longer necessary.

7. Owner must allow the EPA, state, and/or their authorized agents and representatives, access to the Property to inspect and evaluate the continued effectiveness of the final remedy and if necessary, to conduct additional remediation to ensure the protection of the public health and safety and the environment.

In addition, any Environmental Covenant or order will require the Facility owner to continue the groundwater monitoring program already in place.

D. Implementation

EPA will implement the land and groundwater use restrictions necessary to prevent human exposure to contaminants at the Facility through enforceable ICs such as orders and/or an Environmental Covenant pursuant to the Virginia Uniform Environmental Covenants Act, Title 10.1, Chapter 12.2, §§10.1-1238 - 10.1-1250 of the Code of Virginia, (UECA) and UECA's implementing regulations, 9VA15-90-10-60. If an Environmental Covenant is to be the institutional control mechanism, it will be recorded in the chain of title for the Facility property. In addition, EPA acknowledges that the Virginia Department of Health issues drinking water permits for wells and does not allow the use of contaminated groundwater as a drinking water source. The continuation of the existing groundwater monitoring program until groundwater clean-up standards are met will be enforceable through an enforceable instrument such as an order or an Environmental Covenant. If EPA determines that additional institutional controls or other corrective actions are necessary to protect human health or the environment, EPA has the authority to require and enforce such additional corrective actions through an enforceable mechanism which may include an order or Environmental Covenant.

VI. Evaluation of EPA's Final Decision

This section provides a description of the criteria EPA used to evaluate the final decision consistent with EPA guidance, "Corrective Action for Releases From Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule," 61 Fed. Reg. 19431, May 1, 1996. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria.

A. Threshold Criteria

1. Protect Human Health and the Environment

With respect to groundwater, while low levels of contaminants remain in the groundwater beneath the Facility, the contaminants are contained in the aquifer and do not migrate beyond the areas on the Facility property. For this reason, the area of contaminated groundwater is contained. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met. The Virginia Department of Health issues drinking water permits for wells, and does not allow the use of contaminated groundwater as a drinking water source. With respect to future uses, the final remedy requires groundwater use restrictions to minimize the potential for human exposure to contamination and protect the integrity of the remedy.

With respect to Facility soils, all contaminated soil is below the surface and contained within Facility property. There is no direct exposure of industrial workers to subsurface soil under current land use, and direct exposure of construction/excavation workers is controlled by the existing Facility administrative controls including the Facility-wide excavation permitting process, excavation hazard demarcation program and appropriate health and safety plans. With respect to future uses, EPA will implement land use restrictions in order to minimize the potential for human exposure to contamination.

2. Achieve Media Cleanup Objectives

The Facility has achieved the EPA's non-residential Risk Based Contaminants (RBCs) for industrial soils. The groundwater plume appears to be stable (not migrating), and COPCs though above Federal MCLs are either stable or declining over time. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met. The Facility meets EPA risk guidelines for human health and the environment. EPA's final decision requires the implementation and maintenance of institutional controls to ensure that Facility property is not used for residential purposes and groundwater beneath Facility property is not used for any purpose except for industrial use as non-contact cooling water and to conduct the operation, maintenance, and monitoring activities required by VADEQ and EPA.

3. Remediating the Source of Releases

In all decisions, EPA seeks to eliminate or reduce further releases of hazardous wastes and hazardous constituents that may pose a threat to human health and the environment. As

shown in the Phase II RFI Report, the Facility met this objective. Groundwater is not used for potable purposes at the Facility or at neighboring facilities. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met. The Virginia Department of Health issues drinking water permits for wells and does not allow use of contaminated groundwater as a drinking water source. There are no remaining large, discrete sources of waste from which constituents would be released to the environment. Therefore, EPA has determined that this criterion has been met.

B. Balancing/Evaluation Criteria

1. Long-Term Effectiveness

The ICs will maintain protection of human health and the environment over time by controlling exposure to the hazardous constituents remaining in soils and groundwater. EPA's final decision requires the compliance with and maintenance of land use and groundwater use restrictions at the Facility. EPA anticipates that the land use and groundwater use restrictions will be implemented through orders and/or an environmental covenant to be recorded in the chain of title for the Facility property. If the mechanism is to be an environmental covenant, the environmental covenant will run with the land and as such, will be enforceable by EPA and/or other stakeholders against future land owners. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met.

2. Reduction of Toxicity, Mobility, or Volume of the Hazardous Constituents

The reduction of toxicity, mobility and volume of hazardous constituents at the Facility has already been achieved, as demonstrated by the data of the groundwater monitoring showing that the plume appears to be stable (not migrating), and concentrations of constituents of potential concern (COPCs) are either stable or declining over time. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met.

3. Short-Term Effectiveness

EPA's final decision does not involve any activities, such as construction or excavation, that would pose short-term risks workers, residents, and the environment. In addition, EPA anticipates that the land use and groundwater use restrictions will be fully implemented shortly after the issuance of this Final Decision and Response to Comments. In addition, a groundwater monitoring program already in place will continue until groundwater clean-up standards are met.

4. Implementability

EPA's final decision is readily implementable. EPA will implement the institutional controls through an enforceable mechanism such as an order or an Environmental Covenant, pursuant to the Virginia Uniform Environmental Covenants Act, Title 10.1, Chapter 12.2, Sections 10.1-1238-10.1-1250 of the Code of Virginia. EPA will continue the groundwater monitoring through an enforceable mechanism such as an environmental covenant or order. Environmental Covenants are readily implemented. In addition, EPA does not anticipate any regulatory constraints in issuing orders.

5. Cost-Effectiveness

EPA's final decision is cost effective. The costs associated with this administrative remedy and the continuation of groundwater monitoring are minimal. The costs to record an environmental covenant in the chain of title to the Facility property are minimal. Likewise, the costs associated with issuance of orders are also minimal.

6. Community Acceptance

The only comments EPA received on its proposed remedy for the Facility were from DuPont. Based on the Facility's comments, EPA has made minor modifications and clarified certain aspects of the proposed remedy as described in Attachment A, Public comments and EPA Responses.

7. State/Support Agency Acceptance

VADEQ has reviewed and concurred with the final remedy for the Facility. Furthermore, EPA has solicited VADEQ input and involvement throughout the investigation process at the Facility.

VII. Environmental Indicators

EPA sets national goals to measure progress toward meeting the nation's major environmental goals. For Corrective Action, EPA evaluates two key environmental indicators for each Facility: (1) current human exposures under control and (2) migration of contaminated groundwater under control. EPA determined that the Facility met these indicators on January 31, 2011.

VIII. Financial Assurance

EPA has evaluated whether financial assurance for corrective action is necessary to implement EPA's final decision at the Facility. The costs to obtain orders or environmental covenants are minimal. The Facility has already provided the information necessary for EPA to issue an order. Also, given that EPA's final decision does not require any further engineering actions to remediate soil, groundwater or indoor air contamination at this time and given that the costs of implementing institutional controls and the continuation of groundwater monitoring at the Facility will be minimal, EPA is proposing that no financial assurance be required.

IX. Declaration

Based on the Administrative Record, EPA has determined that the Remedy as set forth in this Final Decision is appropriate and will be protective of human health and the environment.

Date: 8/22/12



Abraham Ferdas, Director
Land and Chemicals Division
US EPA, Region III

Attachments

Figure 1: Location Map

Figure 2: SWMUs and AOC location map

Figure 3: Monitoring Wells Location Map

Table 1: Summary of Site-Wide Groundwater Results

DuPont Teijin Administrative Record Index

Figure 1: Location Map

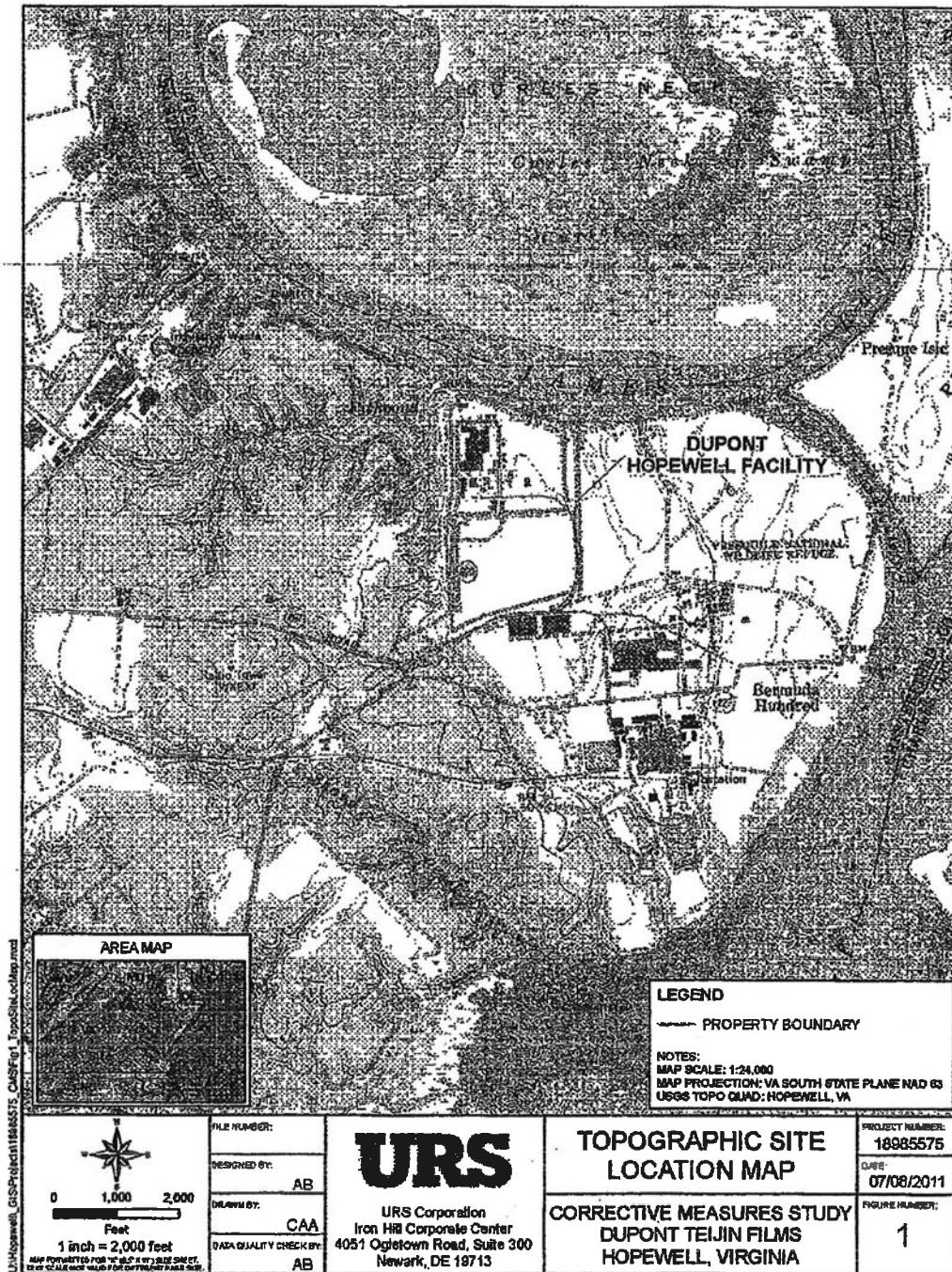


Figure 2: SWMUs and AOC location map

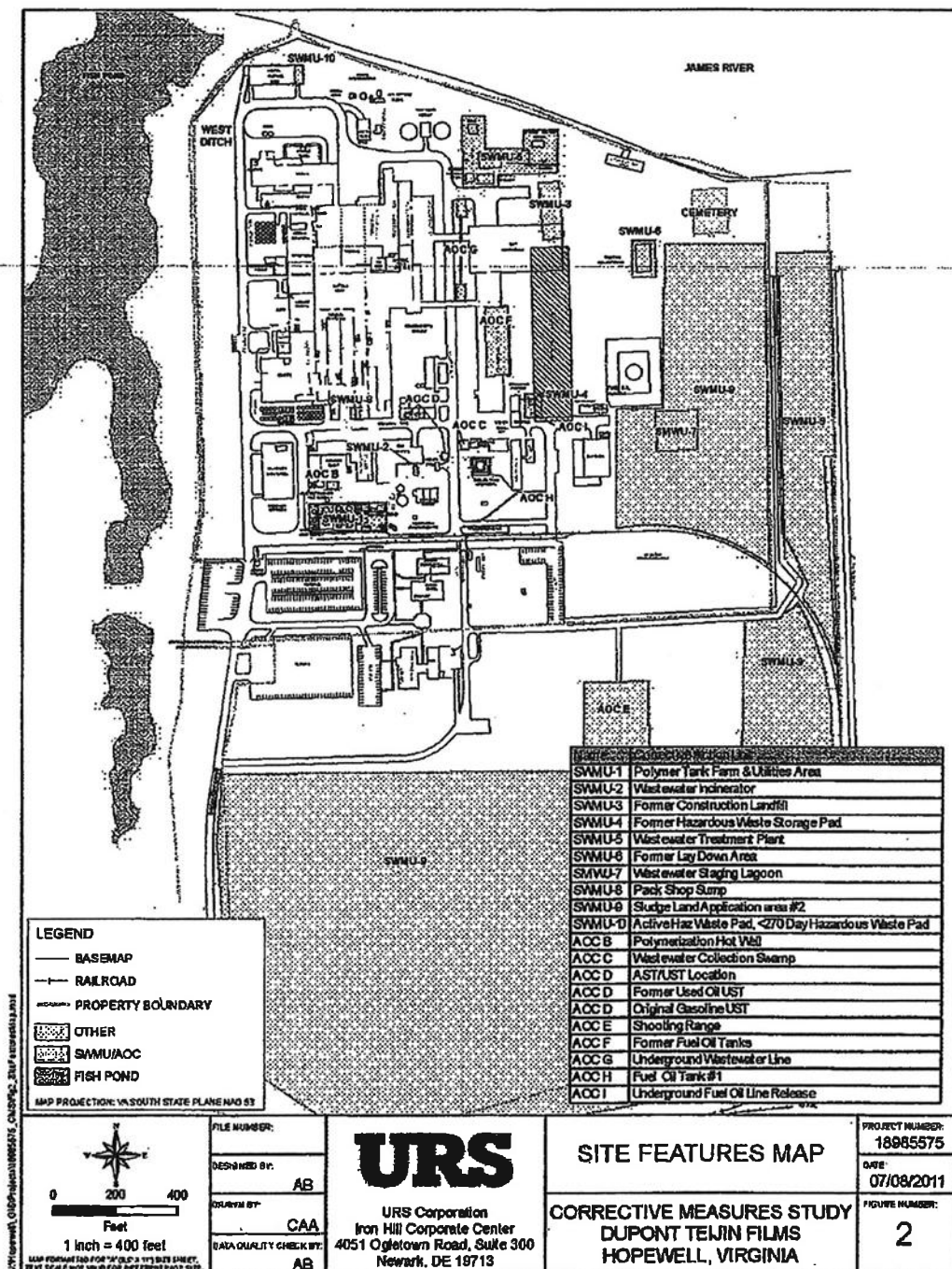


Figure 3: Monitoring Wells Location Map

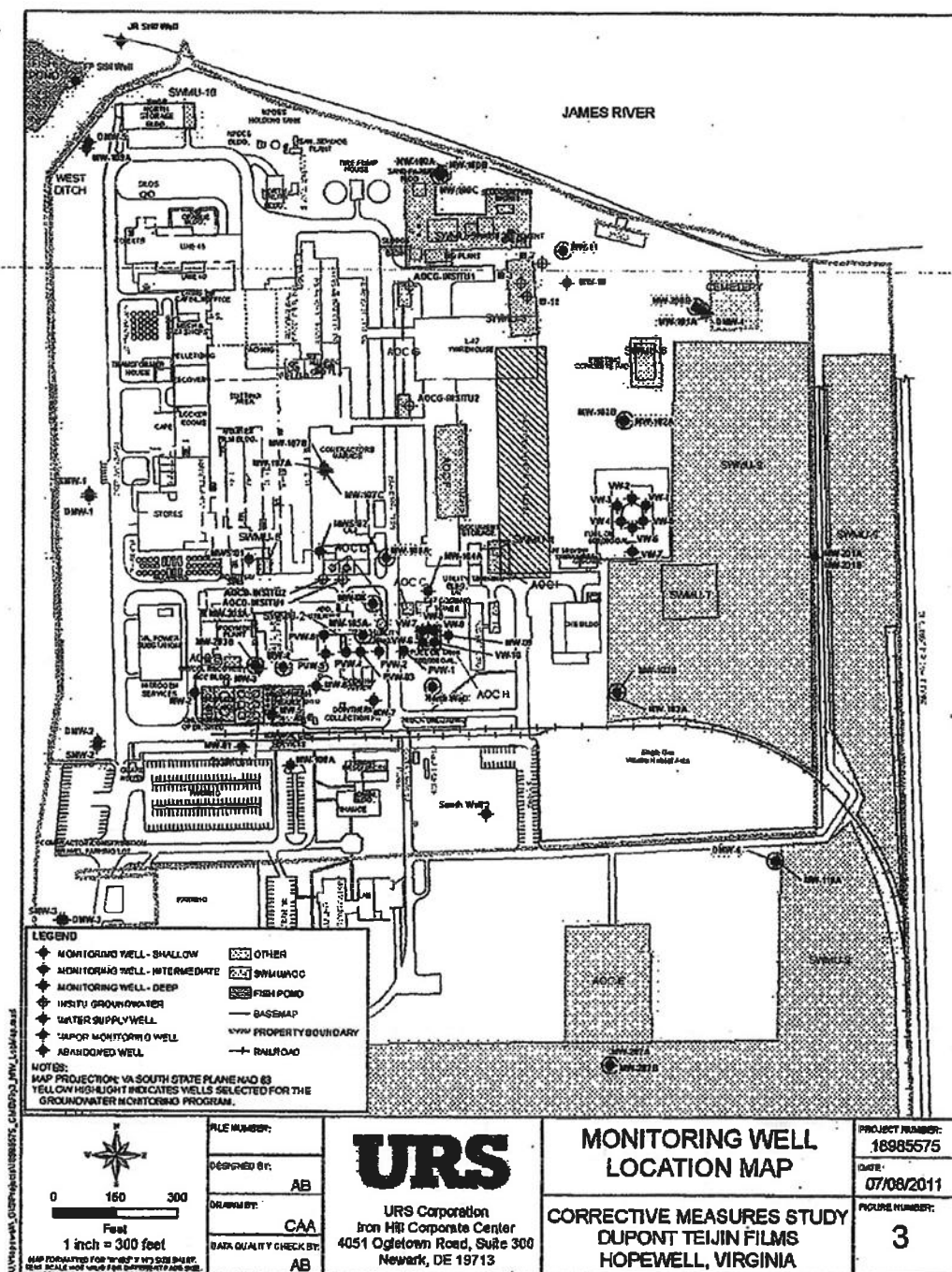


Table 1

Criteria = EPA Regional Screening Level (HQ=0.1) (November 2010 version) or Federal MCL
^ Orange Shaded Cells = MDL > then Screening Criteria.

<DL = Not detected at stated reporting limit

UL = Not detected at stated reporting limit, which may be biased low.

J = Estimated value

D = Detected in associated laboratory of field blank.

4,4'-Oxybisbenzene value is Dursol site-specific value with $\text{HO}=\text{O}$ 1

MCL for chloroform is trihalomethanes

The following surrogates were used where SLs were unavailable:

Acenaphthylene value is acenaphthene

Benzene(ϵ , n_D) pylene value is pyrene.

Phenonium value in Chloroform

Cardinalium value is Cardinalium (water)

Mercury value is mercuric chloride

[illegible]

[illegible]

1,4-DICHLOROBENZENE	UGA T	2.4		<0.1	<0.1	<0.1	<0.1	96.8	97.8	<0.1	<0.1	<0.1	<0.1	<0.1	1.3
1,3-DICHLOROBENZENE	UGA T	34	7	<0.1	<0.1	<0.1	<0.1	1.1	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.34
1,2-DICHLOROBENZENE	UGA T	0.15	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
ACETONE	UGA T	2.2													
BENZENE	UGA T	2,200	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.1
BROMODICHLOROMETHANE	UGA T	0.01		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CARBON DISULFIDE	UGA T	100		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CHLOROBENZENE	UGA T	8.1	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CHLORODIBROMOMETHANE	UGA T	0.15		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CHLOROFORM	UGA T	0.19		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DIBROMOCHLOROBENZENE	UGA T	7.3	70	<0.1	<0.1	<0.1	<0.1	1.4	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	0.2
DIBROMOBENZENE	UGA T	2,100		<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.4
META AND PARA-XYLENE	UGA T	1.5	700	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
METHYL ETHER KETOSE	UGA T	700	10,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
METHYL FINE CHLORIDE	UGA T	4.8		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
NITROCHLOROBENZENE	UGA T	0.11	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TOLUENE	UGA T	1,000		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRIMETHYLBENZENE	UGA T	11	190	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRICHLOROBENZENE	UGA T	2	5	<0.1	<0.1	<0.1	<0.1	1.5	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
VINYL CHLORIDE	UGA T	130		<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3
1-XYL-BENZENE DIETHANAL ETHER	UGA T	0.018	2	<0.1	<0.1	<0.1	<0.1	10.0	10.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-DINITROBENZENE	UGA T	0.37		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-DIOXANE	UGA T	0.87		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-METHYLPYRROLIDINE	UGA T	15		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
AQUAMETHANE	UGA T	220		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
ACRYLAMETHANE	UGA T	120		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOPROPANE	UGA T	1,100		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZODIBROMOBENZENE	UGA T	0.028		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.013		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.017		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.028		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.028	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	180		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	4.8	4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	2.8		0.014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.028		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	37		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	150		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	180		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.028		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	1.4		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	1.00		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	1.100		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	178,000		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	120		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	1.3		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.045		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BENZOCYCLOHEPTADIENE	UGA T	0.046	10												

Criteria = EPA Regional Screening Level (HQ=0.1) (November 2010 version) or Federal MCL

^ Orange Shaded Cells = MDL > than Screening Criteria

Yellow Shaded Cells = Concentration above criteria

<DL = Not detected at stated reporting limit

UL = Not detected at stated reporting limit, which may be biased low.

BT18A D3170097 = C

B - Detected in associated laboratory or field blank

R = Unusable result. Compound may or may not be present in this sample.

4.1.1-Oxytoluenes is value is Dupont site-specific value with HQ=0.1

MCL for chloroform is trihalomethane.

The following surrogates were used where SIs were unavailable:

Acceptance of the value in acceptance

Benzox(g,h,i)perylene value is pyrom

Phenanthrene value is anthracene

Chromium value is Chromium III

Carbonized value is Carbonizing (water)

Mercury value is mercuric chloride

DuPont Teijin Administrative Record Index

List of Correspondence and Reports for the DuPont Teijin Hopewell, VA Site as of November 21, 2011

- 1 EPA Facility Lead Agreement Letter – October 24, 2006
- 2 DuPont acceptance of EPA Facility Lead Agreement – December 27, 2006
- 3 DuPont Teijin Films Phase 1 RFI Work Plan – March 27, 2007
- 4 Final EPA RCRA Site Visit Report (TetraTech) – April 26, 2007
- 5 EPA comments on DuPont RFI Phase 1 Work Plan – September 14, 2007
- 6 Revised DuPont Teijin Films Phase 1 RFI Work Plan – November 30, 2007
- 7 EPA approval of Phase 1 RFI Work Plan – February 4, 2008
- 8 DuPont Phase 1 RFI Report – October 15, 2008
- 9 EPA Comments on Phase 1 RFI Report – March 4, 2009
- 10 DuPont Response to EPA Comments on Phase 1 RFI – April 3, 2009
- 11 EPA approval to Proceed to Phase 2 RFI Work Plan via e-mail from William Geiger – May 4, 2009
- 12 DuPont Phase 2 RFI Work Plan – October 19, 2009
- 13 EPA approval of Phase 2 RFI Work Plan via e-mail from William Geiger – October 28, 2009
- 14 DuPont Phase 2 RFI Work Plan Addendum – March 18, 2010
- 15 EPA approval of Phase 2 RFI Work Plan Addendum via e-mail from William Geiger – March 29, 2010
- 16 DuPont Phase 2 RFI Report – December 29, 2010
- 17 DuPont submits EI reports for EI725 and EI750 – December 29, 2010
- 18 EPA approval of Phase 2 RFI Report – March 16, 2011
- 19 DuPont submits Corrective Measures Study Report – August 26, 2011
- 20 Private Well Regulations for Virginia
- 21 Virginia Uniform Environmental Covenant Act and Implementing Regulations
- 22 DuPont Corrective Measures Study (CMS) approval by EPA - November 21, 2011

Attachment A to
DuPont Teijin FDRTC

EPA Response to Comments

During the public comment period, EPA received comments from DuPont on the Statement of Basis. EPA's summary of DuPont's comments and EPA's responses to those comments are set forth below:

DuPont Comment No. 1 (Summary):

DuPont commented that the full name of the facility is DuPont Teijin Films.

EPA's Response

EPA agrees with this comment and has incorporated language into Section I (Introduction) to reflect so.

DuPont Comment No. 2 (Summary):

DuPont commented that DuPont entered into a 50/50 joint venture with Teijin Films.

EPA's Response

EPA agrees with this comment and has incorporated language into Section I (Introduction) to reflect so.

DuPont Comment No. 3 (Summary):

DuPont commented that they no longer produce methanol as part of their process.

EPA's Response

EPA agrees with this comment and has incorporated language into Section II (Facility Background) to reflect so.

DuPont Comment No. 4 (Summary):

DuPont commented that Table 1 identified constituents of potential concern and their concentrations.

EPA's Response

EPA agrees with this comment and has incorporated language into Section III (Summary of Environmental Investigation) to reflect so.

DuPont Comment No. 5 (Summary):

DuPont commented that no new wells should be installed on Facility property without consultation with and approval from VADEQ and the EPA, instead of the proposed language limiting new wells for site remediation only, as DuPont might want to add wells for industrial use.

EPA's Response

EPA accepts this comment and has incorporated language into Section IV (Corrective Action Objectives) to reflect so.

DuPont Comment No. 6 (Summary):

DuPont commented on the proposed language for earth moving activities would require EPA and VADEQ approval for work done anywhere on the site and would be burdensome. DuPont proposed that approval for earth moving activities only be needed at SWMUs and AOCs.

EPA's Response

EPA agrees with this comment and has incorporated language into Section IV (Corrective Action Objectives) to reflect so.